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THE MAIN FEATURES OF THE ADVANCE IN THE STUDY OF DANISH ARCHEOLOGY[1]

BY W. DREYER

Up to less than sixty years ago very little was known regarding prehistoric man. By "archeology" was meant, at that time, the study of Roman, Greek, Egyptian, and Phenician civilization. Beyond this the sober man of science hesitated to venture. That vast space of time in the history of man's development antedating written records, before any inscribed records whatsoever, was a playground for the imagination — the imagination that created the fairy tales and the myths. Here gods and demigods, giants and monsters, dwarfs and ogres, were allowed full play. Here were space and time for all that could not bear the strong light of the present or of the historic past. Here was placed that golden age to which man will steadfastly cling. Though he dare not hope for a future, here on earth, when the lion shall lie down with the lamb, yet he insists upon the darkness of prehistoric ages being illumined by rays of light from Paradise. And the poet seized this tempting material with a poet's cunning and a poet's license. He changed and added until childish myths and dark fables glittered with wisdom and beauty. He deepened that which was already deep, and adorned with a rich, profound, and mystic symbolism all that appealed to the imagination, all that was already veiled in parables, simple though not always easy to understand: a symbolism

[1] Translated by Miss Elsie Warburg, and published originally in the *Saga-Book of the Viking Club*, this interesting memoir has been revised and is now made accessible to American students.

which gave to men's minds what they will ever desire — questions to answer and riddles to solve.

But the real riddle of the past was not solved, its difficult question was not answered; no one even tried in real earnest to do so. Learned men could not even view the childhood of the race dispassionately. They were too deeply entangled in the web wrought by priests and wise men through centuries of folklore and of ever-changing religions. True, the man of science knew that much of what was said and believed of the past was idealizing inventions; true, every now and then a gleam of light shone forth, but, on the whole, what met him when he turned to the veiled darkness of the past was not encouraging. Nowhere was there a distinct boundary between light and darkness; nowhere was there a separation of land and sea; nowhere could he trace a division of time or advance in development. All was chaos.

But, slowly and steadily, albeit quietly, a serious work had begun in this direction. One fine day the first light cast its flickering beam on the fogs and mists of the dark ages. From Denmark and Sweden its light shone forth to far-off lands, where answering beams arose, all having their origin in the little flame kindled in Thomsen's poverty-stricken museum in Copenhagen, and from Sven Nilsson's study in Lund.

What these men did was, to all appearance, not much — only the trisection of Northern prehistoric times into the simple divisions of the Stone, the Bronze, and the Iron Ages. But this was just what was needed, just as certainly as that the first thing that must be done to a large and chaotic collection of facts, whether historic or prehistoric, is to try to introduce some sort of order among them, founded on the chronological sequence of events.

It is certain that many before Thomsen and Nilsson had seen that man's development had passed from a Stone age to a Metal age; that there had been a time when the craft of metalwork was unknown, and that this time preceded the age in which metals were made into ornaments, weapons, and tools. But no one had endeavored to obtain universal acknowledgment of this truth, for no one had made a serious attempt to prove it by introducing order into the tales and by investigating the large collection of mytho-

logical fables. And no one had realized how important such a chronological division must be; even Thomsen and Nilsson can hardly have realized it in its entirety. What it means is simply this: The growth of mankind has been continuous. It has passed from dark to light; from brutality to gentler ways; from lower to higher stages in everything — in spiritual development, in morality, in religion. And the means to further this growth has been this, and this only: the energetic and untiring endeavor of mankind itself to obtain mastery over Nature, to learn her laws and to practise their use; to become master of all substances, to manipulate and use them in ever-increasing ways for the furtherance of man's innumerable aims. The object of the study of prehistoric ages must, therefore, be to grasp the tendency of all these efforts, so that we shall one day see the path along which the children of men have wandered clearly illumined before us in all its length and in all its windings.

The first step toward this goal was the trisection of the Northern prehistoric ages. For Thomsen and Nilsson did not only divide them into Stone and Metal ages, but they divided the Metal age at once into the Bronze and the Iron ages. Their hypotheses aroused great opposition, as all new ideas do: opposition not only from those who oppose every effort of science to shed light on darkness, but also from men of science. The point around which opposition after a time gathered was the division of the Metal age; all were very soon convinced that a Stone age had preceded that of Metal, not only in Scandinavia, but throughout the earth. But this served only to make the discussion as to whether a Bronze age had preceded the Iron age more bitter, especially as many tried to assert the same universality of this change as of that from the Stone age to the Metal age.

It was from Germany that the attacks on the Bronze age came. With wonderful persistency German men of science maintained that the use of iron *must* have been known before that of bronze; that the elementary metal *must* be older than the alloy, and that, therefore, the Bronze age was, and must be, a chimera. This discussion had great influence on the development of Northern archeology. For decades it forced its promoters to devote most of their work to

the support of the triple division; it forced them again and again to rake up the question for renewed discussion, and always to seek new facts by the help of which they might successfully refute the continued attacks of the opposition. In this way a thoroughness was introduced into the work which has been extremely important. In Scandinavian archeology half-finished work, imaginings, and hasty conclusions are unknown. If such peep forth, they are promptly and completely suppressed. Tradition which, especially in Denmark, has descended from Thomsen through Worsaae to Sophus Müller has hitherto been strong enough to guard the banner.

In the seventies the strife at length subsided. The outcome was absolute defeat for the opponents of the Bronze age. The argument which was longest clung to in Germany by a number of men of science was that those decorations on the Northern bronze articles which were not produced by molding must have been made with tools of iron, perhaps even of steel, for nothing else would make the least impression on the hard bronze. Therefore iron, and even steel, must have been known in the so-called Bronze age, which, consequently, was in reality also an Iron age. To this the Danes for many years could make no reply other than that these decorations were not, and could not have been, produced with steel tools, as everything clearly pointed to the fact that these latter were unknown in the Bronze age. A goldsmith from Copenhagen — one Boas — solved the question. He was much interested in prehistoric metalwork, and often visited the Museum, where he was one day asked by Sophus Müller (now director of the Museum) for his opinion as to the decorations on the bronze articles. At first he said he could not imagine that they had been made by anything but steel-edged tools; but on reaching home he decided to make experiments to test this question. The result was that the next day he showed a piece of bronze of the same composition as that of the Bronze age (90 % copper and 10 % tin), which he himself had decorated in the same style as the objects in the Museum with an instrument made of bronze — a small, hardened graving-tool. This ended the matter, and I mention it only because it is characteristic of the way in which Danish archeology works. The help which science has received from laymen in this direction is priceless.

Now, it is universally acknowledged that the development, at least in Europe and doubtless in the greater part of Asia, was in the following order: Stone, Copper, Bronze, Iron. For it has been proved that, in those places where it is most likely that the smelting of metals originated, a Copper age preceded the Bronze age, though this was probably of short duration, and there are very few traces of it in Scandinavia, where the craft of working in metal, and even the extraction of metals, was originally imported from other lands. The semi-civilized races of Central America seem to have been, even at the time of the arrival of Europeans on their shores, in a state of transition from the Stone to the Copper and Bronze ages. Nowhere have we found as yet any evidence that iron was known and used before copper. There are, of course, many races, including all the Negro races of Africa, which have passed directly from stone to iron, but that was due to the fact that this metal was introduced while they were still in the Stone age.

Though the Danish archeologists devoted so much time to the discussion of this question, they were still able to consider other questions. Side by side with this discussion there was another about the division of the Stone age, and this has been no less important to Danish archeology. The European Stone age is, as is well known, divided into the *Paleolithic* age, the age of the caves and river-gravel, an age in which nothing was known of *polishing* stone, and the *Neolithic* age, "*l'âge de la pierre polie*," as the French have unhappily called it. In the Paleolithic age Denmark can hardly have been inhabited. This was the time of the glaciers, in which the country assumed its present shape. It is just possible that it may have been visited by man in interglacial periods, but of that we have no proof. The whole Scandinavian Stone age is Neolithic, but in the early stages of it the polishing of flints was unknown. It is just this point that has been discussed for so many years. It was found at the very beginning of the search in the kitchen-middens of the sea-coast settlements in the early fifties, that in many of these there were neither polished flint articles nor any of the beautiful and delicately-made prehistoric objects which were so well known, having been found in large quantities in the surface soil and in the large dolmens. From this, and from several other things,

Worsaae concluded that the oldest kitchen-middens dated from an earlier period, in which the polishing of flints was unknown; whilst Steenstrup insisted that they represented only one special side of the life and culture of the Stone age, and that in reality they were contemporary with, and were made by, the same people that had erected the large dolmens, with their beautifully polished and finely carved stonework. Both views had supporters, and the strife continued — or, rather, flared up from time to time — till quite lately. It has ended, presumably, with the death of Steenstrup, and ended in the triumph of Worsaae's opinion. Many and detailed have been the investigations it has given rise to, but it has always been possible for those in favor of the division to refute their opponents' arguments. There was one particular implement found in the kitchen-middens around which, after a time, all the strife centered. This was the so-called triangular axe. Steenstrup's followers would not acknowledge these axes to be edged tools, much less axes, and then was asked, and rightly, "But where are the edged tools of that time? There must have been some, and until you can show them to us we must withhold recognition of your division." Well, after a time axes were discovered with marks of use upon them, and these always on that side which Worsaae rightly called their "edge," and one single specimen of them was found with the remains of a wooden handle attached to the side opposite to the edge, and finally it was practically demonstrated that they could very well be used to cut wood. This ended the discussion.

In 1886 I was fortunate enough to discover a very large kitchen-midden, hitherto unknown, situated by the little village of Ertebölle, in Himmerland, by the Limfjord. I explored it by myself at first, and afterward directed the attention of the archeologists to it. A commission of archeologists, geologists, botanists, zoölogists, etc., was formed and sent to the place, where they have worked for several years, and examined a part of this, the largest kitchen-midden found in Denmark. When the results of the investigations so far concluded are published, it is to be hoped that the last doubts on the subject will have been disposed of, and that it will be proved that Denmark was inhabited before the art of polishing flint was known. Our archeologists will then have the task of locating this

period either in the Paleolithic or the Neolithic Stone age. It will most likely be shown to belong to a purely Scandinavian development, and it will probably also be proved that neither in England, France, nor elsewhere was the art of polishing stone known at the beginning of the Neolithic age, and that therefore the name "*l'âge de la pierre polie*" is most unsuitable.

Undoubtedly there was a time, extending over several centuries and lying between the old Scandinavian Stone age and that age in which cairns and dolmens were erected, in which there was an immigration of peoples, who brought with them polished implements of a Western European type; or a current of civilization must have proceeded from Western Europe and brought these implements to the country. For we find, especially in Denmark, very many pointed and sharp-edged axes of flint, many spearheads, etc., which are exactly like the English and French, but which are never or, at least, very seldom, found in our tombs.

We have here a period of which no burial places have been found (as is the case with the time of the kitchen-middens), but this period will be of vast importance to the correct understanding of our prehistoric times, as it forms in the first place one of the connecting links between Western Europe and Scandinavia, and in the second place the foundation for the great and peculiar development which the Stone age reached in Denmark.

Sophus Müller has succeeded in producing a reliable chronology of the Stone age — a space of time covering centuries, or even so much as a thousand years, must be capable of division. We must be able to distinguish between the ancient and the more modern, even in those times. The basis for such division must be sought, on the one hand, in the shapes of the graves, on the other hand in the different types of ancient implements; both have received the attention of Müller. As regards the graves, they start with the small square-chamber type, made of four stones with one flat stone on top. They gradually develop into the large "passage graves," consisting of roomy, in most cases oblong, chambers with entrance by a roofed and paved passage, which varies in length. Later these changed to stone cists, which gradually decrease in size, so that at the end of the Stone age we find them just large enough to contain the body in a recumbent position.

It was not wholly unknown that there was a group of graves in Jutland which differed greatly in character from the usual type of grave of the Stone age — the dolmen. They have been called "framed graves," because, as generally found, they consist of an oblong rectangular chamber framed by a single line of smaller stones. Very often the larger portion of this stone frame is missing, often the whole has disappeared, so that the grave can be traced only by the different color of the soil inside and outside of the grave chamber. These burial places are situated generally in the earth, not on the surface, and are sometimes covered by a tumulus. In the eighties, while working at the archeological discoveries in the Rinds and Gislum townships I called attention to the presence of such graves, whose chief distinguishing feature is that both the chamber and the coffin are missing, and that they are underground; but no research, either by myself or by others, was comprehensive enough to discover their real value.

When the Rigsdad voted an annual grant (a considerable one for Denmark) for a thorough archeological exploration of the country, and later on for the examination of the thousands of mounds scattered all over the country, most of which were already to a greater or less extent destroyed or disturbed, much light was cast on the subject by these investigations. Scores upon scores of these "framed graves" have been explored in southwest Jutland, whence they extend, though in more scattered numbers, north and east. Hundreds of them are marked by the round tumuli (generally quite small) covering them, and there must certainly be thousands which will be brought to light only by accident, because they are far below the surface, unmarked by a mound. It is likely that this kind of sepulture also was used outside of Jutland, at all events in Funen, where a certain kind of flint axe characteristic of the period is also found buried some feet deep. At any rate, the graves in Jutland form a large group by themselves, characterized not only by their arrangement, but by their contents, which consist almost exclusively of a certain late type of flint axes, of flint spear- and arrow-heads, also of a later date, and finally of battle-axes made of granite, sandstone, etc., generally extremely delicately made and bored through for the handle. Some of the finest things of this sort in existence

come from these "framed graves." We have from them relics of the latter part of the Stone age, which in a certain section of the country lasted so long that we can trace a definite development in it. But the origin of these articles must be sought for outside the country, toward the south and west. It is supposed that a tribe of people from those parts came to the country and wandered up the west coast of the Duchy of Schleswig, and of southern Jutland, or else that a regular trading road was formed there. Which of the two suppositions is right must be left to later discoveries to show.

In later years our previous ideas of the later Stone age of the North have been much broadened by research. Formerly it was thought that their culture was at a very low level, and that the people were hunters or fishermen without any knowledge of farming. It was known that it was not so in other countries, but it was long before any proof was found that even here in the North the people of the Stone age had domestic animals and tilled the ground. Without doubt, the people of the early Stone age lived solely on the proceeds of hunting and fishing, supplemented by the berries, fruits, and roots of the forest. But in the later Stone age, circumstances, even here in the North, had changed. Though we have not found a single bone belonging to a domesticated animal in those kitchen-middens in which are found no articles of polished flint, we find them in the middens of a somewhat later period. It has been shown that as early as that period marked by polished flint — animals of a Western European type — sheep and most likely oxen were kept; it is practically certain that in the time of the big stone sepulchers, of the "passage tombs," both goats and pigs were introduced, and most likely horses as well, so that even the people of the later Stone age knew and kept practically all the domestic mammals now known in Scandinavia. Dogs had been brought in by the first immigrants. In the cairns, and those kitchen-middens contemporary with them, are found bones of the domestic animals I have mentioned, and often also those of wild animals, sometimes shaped into implements.

But agriculture was also pursued in some degree, at all events toward the end of the Stone age. We come to this conclusion partly because we have found — sometimes even in the graves — the large stones, hollowed by friction, which were used here, as

everywhere else in the world, for grinding corn; partly because some of the corn, curiously enough, has been found preserved. Thus, a Jutland schoolmaster called attention to the fact that he had found some grains of wheat (now turned to coal), besides the impression of others, baked in the clay of which the vessels of the Bronze age were made. This gave the impetus to many investigations, by which it was shown that even in the clay vessels of the later Stone age these grains were found, though only of wheat; while in the vessels of the Bronze age grains of barley and millet seed were found as well, but no rye. Finally, in 1899, a most interesting discovery was made in a swamp, consisting of a sickle with a blade of flint and a handle of wood. This may well have been intended and used for harvesting grain. At any rate wheat must have been grown at the end of the later Stone age. As yet we do not know how far back the art of agriculture dates, perhaps it was even known at the beginning of this period, but certainly not in the earlier Stone age. Many things lead us to suppose that millet also was grown in the Stone age, although as yet we have no proof.

We must therefore correct our ideas about the Scandinavian people of the later Stone age. They were not savages who obtained from Nature a precarious existence by means of fishing and hunting. They were a comparatively civilized people who tilled the ground and bred many domestic animals, although they fished and hunted as well. They were undeniably expert in many arts (the making of clay vessels, stone carving, wood carving, etc.); they produced wonderfully well-made weapons and tools, and in great variety; the division of labor was fairly even; they had fixed residences, commercial intercourse, a religion whose standard was not low; their sense of beauty was great, as is shown by their ornamentation and the beautiful shapes of their weapons, which are sometimes almost refined in form. In short, they had attained a definite stage of civilization.

Thus we see that, in the last decades, much has been done by Danish archeologists to determine the conditions of our Scandinavian Stone age. And the same has in no less degree been done for the Bronze age. All investigators were obliged to occupy themselves

for some time solely with this period, and that has, of course, borne fruit.

One question that has been raised is still unanswered. It is this: Was the passage from the Stone age to the Bronze age in Scandinavia due to the immigration of a new race of people or to the regular currents of civilization without any immigration? The scarcity of objects that could be attributed to a transition stage point to the first solution, but the regular continuation into the early Bronze age of the method of burial peculiar to the later Stone age (stone cists with one recumbent corpse, not cremated) points to the second, or, at least, indicates that the immigrants were very similar to the original inhabitants in manners and customs. But it is quite clear that throughout the whole of the Bronze age there was commercial intercourse with southern countries, at first with the lands around the eastern Danube and Hungary, later with Italy. In this way much bronze and gold was brought to Scandinavia, most likely in the form of weapons, ornaments, and tools, which were, of course, melted down after a time to be remade according to the taste of the period. Comparatively few of the foreign-made articles have survived; among them are some originating in England and France, with which countries, there must, therefore, have been communication. The means of exchange in Denmark in all probability was, first and foremost, amber, which, though found in such imposing quantities among our relics of the Stone age, seems to have quite disappeared in the Bronze age — it was, of course, exported.

The Bronze age in Scandinavia extended over a long period; indeed, it is strange how long it took for iron to make its way. As a result, the Bronze age reached a higher state of development in Denmark than anywhere else on the face of the earth. This is what gives to this period its extraordinary scientific importance. For eight or ten centuries bronze and gold were the only metals known in Scandinavia. Such a long period must be divided into shorter periods, and it must be ascertained what belongs to an earlier or a later period, what is beginning and what is end. Here also a great work has been performed. In 1859 Worsaae divided the period into an earlier and a later Bronze age, having as early as 1843 come to the conclusion that those bronze articles which were decorated in spirals were the oldest.

It may be thought that such a common, simple, and elementary decoration as the spiral was rather a slender basis for such an important decision. Yet it is not found in our Stone age; it appears very often in the Bronze age, and can be traced through the east of Central Europe to the countries around the eastern Danube; to Mycenæ and Egypt; and it is a proof of Worsaae's penetration that he so quickly became aware of its importance. After a time there was seen to be a sharp division between two groups of bronze articles, an earlier and a later, and the division between the periods to which they belong is almost contemporary with a great alteration in the burial customs: the transition from the burial of unburnt corpses to cremation.

Throughout the Bronze age there is a clearly traceable development in the shapes of the graves. On the whole, those are the oldest which contain unburnt corpses, in stone cists or under heaps of stones covered by mounds, which are often of great size.

Contemporary with these are the famous graves with oak coffins, which have given us such priceless information about the manners and customs of the earlier Bronze age; about the costumes of men and women; about the way in which weapons and ornaments were worn, etc. We know, by this means, that the men did not wear beards; and by a minute microscopical inspection of the well-preserved locks of hair, it has been demonstrated that the race was fair.

Occasionally we find, in graves of the same shape and size, burnt bones, which point to a new way of treating corpses, namely, by cremation; and this finding almost marks the boundary-line between the early and later Bronze age. But a few burnt bones do not require a large grave, and so, gradually, the graves diminish in size, as do also their accompaniments. Very soon the custom arose of burying the carefully collected bones in a clay urn specially designed for the purpose, which also contains the small objects of bronze or bone which are buried with the corpse. These urns, surrounded by stones, are placed either in the old mound or in a new and smaller one on the top of it; they are also found singly in fields, or in larger quantities in a graveyard.

Outside of the graves have been found many unused articles, both weapons and household implements belonging to the Bronze

and the Stone ages, which we presume must be hidden treasure or commercial stock; some of them must also have been votive offerings and some intended as gifts, hid during the lifetime of the person in hope that they might be of use to him or her in the hereafter. In such ways the value of the grave-goods, so poor in the later Bronze age, is enhanced. The votive offering often consists of weapons, such as seven axes, thirteen spearheads, etc., which we must presume were buried in fulfilment of a promise to the gods, as a thankoffering for preservation in danger or illness, etc. It is a curious fact that this group of finds always, or almost always, presents objects of one kind, to wit: all spear-heads or axes, knives, etc., but rarely a mixture of different kinds of objects, as spears, axes, knives, etc.

Sophus Müller has proposed to divide each of the two divisions of the Bronze age into two, based on the differences in the decorative work; but the typical differences will necessarily be less well defined, and the transition stages more vague, the shorter the periods into which the time is divided.

Among the detailed investigations pertaining to the Bronze age must be mentioned those to which the well-known "lurer," or war trumpets, have given rise. In the peat-bogs of Denmark and southern Sweden many large and beautiful trumpets have been found, a yard and more in length, and made of bronze. They are very thin, and made in several pieces, afterward fastened together; they are richly ornamented, and often have chains and small pieces of brass attached. They are always found in pairs, which are seen to belong together owing to the bend in one of the pair being always in the opposite direction to that in the other; in one case no fewer than three pairs were found together. Much was spoken and written about these instruments, but to little effect until the composer, Hammerich, examined them to find their musical powers and value. The six that were in the best state of preservation were restored, only very slight repairs being needed, and it was found that they were in excellent working order and really perfect.

Many carefully calculated peculiarities of shape and work contributed to give them a mildness and softness of tone, which was, nevertheless, powerful. Each pair is carefully tuned together, the

notes being C, D, E♭, E, and G. The instrument was held upward when played; in this position it is well-balanced, and the sound is carried to the audience. The notes are the so-called "natural notes," which are produced only by the lips. The register contains 12 notes in 3½ octaves; if the harmonic notes in the bass are included, it is increased to 22, but we, of course, do not know whether all were known in prehistoric times. The tone of the instrument is very much the same as that of a bassoon; as they are found in pairs tuned together, there is reason for supposing that they were used together. This is, quite briefly, the chief result of Hammerich's investigations; it is surprising that, at so early a period, we in Scandinavia had such highly developed musical instruments. But it agrees very well with our present knowledge of the Bronze age and its people. We knew that the people of the later Stone age had a comparatively high state of culture; we can, therefore, hardly call it surprising that we have found that the Bronze age was still farther advanced. It is an obvious result of the investigations of modern times that we have realized that the Scandinavian Bronze age was a period of extraordinary development, a period hitherto undervalued. The people bred cattle and were agriculturists. We have already mentioned the domestic animals and kinds of grain known to them. They had fixed dwelling-places, and cleared large expanses of forest. It is shown by the fact that the large groups of tumuli found all over the country are so often gathered around the sites of modern villages, that many of the latter were actually founded in the Bronze age. Long rows of these tumuli are also found stretching for miles across the heaths of Jutland, where they are in the best state of preservation. They often either begin or end at ancient fords, and there is no doubt that they ran by the side of old paths or roads. These, of course, followed the habitations, so that we can trace the course of the builders by means of these tumuli.

It is easy to show that the people of the Bronze age were commercial and seafaring men. The steady influx of metal must be due to commerce. It was paid for in amber, and perhaps also in hides and grain, and such things. Shipbuilding was fairly well developed; canoes hewn out of oak logs were no longer sufficient. On many bronze implements, especially razors, and on a certain kind of large

neckrings, we find engraven seascapes, showing us large vessels with a keel and a prow rising high from the bow which makes the vessel look as if it had a double prow. We find these ships again in the figures of the so-called *helleristninger* (rock-carvings), carved or scratched on large isolated stones in Denmark, and far oftener on the faces of cliffs in Bornholm, Sweden, and in southern Norway (fig. 110). But so far we had found no boat preserved from that remote time. Great therefore was the rejoicing when a few years ago a large num-

FIG. 110. — *Helleristninger*, or Rock-carvings. (Scale about $\frac{1}{12}$.)

ber of small models of the boats or ships of the Bronze age were discovered. Buried in a clay vessel were found more than one hundred small boats a few inches in length, made of thin gold sheets, beaten out with the help of bronze tools (fig. 111). It was clearly shown that they had, in the Bronze age, good seagoing vessels, built of laths fastened together with wooden pegs. The hoard must be considered as belonging to the aforementioned class of votive offerings. The gold boats must have been given or sacrificed to the gods as a thankoffering for success in battle, or a danger surmounted, or some such thing; either all at once or at different times. Perhaps here was the shrine of a god of the sea.

Industry had also reached an advanced stage. The art of working in bronze was highly developed; even now we cannot mold so finely or thinly as they did. The "lurer" and many of the bronze vessels must arouse the admiration of all who know anything about metalwork. Soldering was unknown; if an article of bronze was injured, they tried to repair it with melted bronze, or by putting on a thin plate. The rich ornamentation is executed with finished skill. We learn from various facts upon which we cannot here enter in detail that this industry was highly developed. For example, the textile fabrics found in the oaken coffins are beautifully woven, and to-

FIG. 111. — Gold Vessels of the Bronze Age, including some of the Tiny Gold Votive Boats. (Scale: Gold cups, $\frac{1}{5}$ to $\frac{1}{6}$; vessel with handle, $\frac{1}{5}$; gold boats, $\frac{1}{2}$.)

gether with them are found finely knotted hair-nets, and caps with an outer layer of some tufted stuff; it has been found impossible, hitherto, to discover how they were made.

Our knowledge of the time is, of course, fragmentary, and will always remain so; we know little of the undoubtedly highly developed craft of woodcarving; still less of the arrangements of their

dwellings, etc., but we have discovered enough, especially during the last decades, to make us respect the people of the Bronze age. Their weapons, ornaments, and tools, the shape and ornamentation of which are highly artistic, say much for their sense of beauty. The votive offerings, the grave-goods, show that they had a religion; a belief in gods and in a life after death; it is most probable that they had a more or less developed mythology, and many tales. The "lurer" testify to their being musical, and among a people who had cultivated and understood music so well the poetic muse cannot have been wanting. Writing was unknown, but the rock-carvings must be considered as a sort of pictorial writing, by which the memory of great men and great deeds was preserved to posterity.

The result, then, of Scandinavian research into the Bronze age is this: We now have a thorough outlook over the time, over its culture, the process of development, etc.; and, above all, we can with justice maintain that hardly anywhere else on earth has the culture of the Bronze age reached so high, so rich, and so peculiar a development as here in the North.

We have trespassed for so long on the time and patience of the reader, that we must be brief in our account of the Iron age, though there is much in it that is new and interesting.

Many years ago Worsaae showed that the Iron age could also be divided into, at least, "the earlier" and "the later." But subsequent investigations have shown that, at all events in Denmark, there are more and well-marked divisions:

1. The Pre-Roman, or so-called "Celtic" period.
2. The Roman Iron Age.
3. The Age of the migrations.
4. The Post-Roman Age.
5. The Age of the Vikings.

It is presumed that the Bronze age superseded the Stone age about 1,200 years before the commencement of our present era. Iron superseded bronze about 800 years later, so that we now place the commencement of the Iron age at about 400 B.C. We have found, very rarely, a small ring, a pin, or a knife of iron from the latter part of the Bronze age; but such finds are merely forerunners. The appearance of iron implements in any great number

coincides with the introduction of an entirely new style and shape of antiquities. The question as to whether this was owing to the immigration of a people to whom the use of iron was known, or to the importation of a new civilization, is still unsolved.

The whole character of the oldest iron articles, as well as those of bronze and gold of the same period, and the clay vessels contemporary with them, are of the so-called "Celtic" pattern, though with certain modifications that show that the imported patterns were altered (at least to some extent) to suit Scandinavian tastes.

The Celts, whose last descendants have been driven to the western extremities of Europe — to Ireland, Scotland, Wales, and Brittany — lived, in the last centuries before Christ, in central Europe, whence their influence reached Scandinavia, and was strong enough to end the Bronze age. The Iron age does not betoken a revolution in Scandinavian civilization. The change consists in the gradual superseding of bronze by iron in weapons, implements, and ornaments, and a consequent change of taste. People continued to use bronze, but "zinc bronze" (brass) instead of "tin bronze." The burial customs remained unchanged, at all events at first, and cremation continued to be the rule; our burial and "fire spots" (bones and coal from the pyre buried in a hole) continue through the earlier as well as the later age; but it became more usual for the graves to be gathered in one large space, either under a very low mound or with none at all.

The very earliest stage of our Iron age became known to science only by the explorations of Mr Vedel, a high government official in Bornholm, whose investigations are among the most admirable and thorough in the history of our archeology. Thousands of "fire spots" were excavated, together with small low mounds built of stones (*röser*) belonging partly to the later Bronze, partly to the Iron age. From among these Vedel speedily separated some, in which were found a very few and badly preserved antiquities differing from all others previously known. Similar ones have since been found in other places, particularly in Jutland, while the great Danish isles seem only to have been slightly affected by this advance of culture; the Bronze age seems to have continued there a century or two longer than in other parts of Denmark.

Those modifications in style which are also found in northern and central Germany at a corresponding period are soon lost; a home style is adopted, founded, however, on the imported one.

The "Celtic" Iron age in Denmark is still far from being so well known to us that we can see and comprehend it at a glance; we shall, therefore, not dwell long on it, but merely mention the chief discovery: the wonderful carts from Dejbjerg Mose in western Jutland. A few "rock-carvings," and a single small cart of bronze, on which a large bronze vessel was placed (for use in a temple or at the festal board of a chief), showed that carts were not unknown in the Bronze age. But no one thought that immediately after its close the people of the Scandinavian North were in possession of a conveyance so technically perfect, comparatively speaking, as the "Dejbjerg" carts, one of which, in a restored condition, is exhibited in the National Museum in Copenhagen, and is considered among that museum's chief treasures. These carts had four wheels, with nave and rim of ash. The latter was in one piece, which was bent round while in a state of heat, and covered with a heated tire. The sides, the shafts, etc., are of ash, richly ornamented with bronze, the ornamentation being of a foreign pattern, consisting also, in part, of human faces made of bronze. In the midst of the cart is a square stool, in which the chief, or, may be, the idol, for whose use it was intended, had his seat. They were arranged for two horses, which were harnessed by means of a yoke. Without doubt the workmanship (which is splendid) is Scandinavian, though the style is the so-called "Celtic."

Gradually, as the power and might of Rome increased, Celtic culture and the Celtic race had to bow before her, and soon we can trace the influence of Rome in the North, whither, however, as is well known, her political power never extended. The Celtic age was superseded, about the time of the birth of Christ, by a Roman, or rather an age whose style was strongly influenced by Roman culture, and in which Roman manufactures were largely imported. At the time when the Germanic tribes crossed the borders of the Roman Empire, classical imports and influence still continued, but the age was characterized here in the North by the influence of Germanic style, and therefore the time of the migrations in the third, fourth, and fifth centuries forms a special period by itself.

Within the last few years we have made two discoveries concerning this period: one in Jutland relating to the older Roman period, and one in Zealand relating to the time of the migrations, both characterized by their graves. In Jutland we have a group of graves from the Roman time, the so-called "urn-graves," to which, among others, I called attention in the eighties. We find in mounds, or buried in level ground, large cists made of slabs of stone, sometimes covered with one or several big stones, but generally open. At first glance they resemble the dolmens of the later Stone age, but

FIG. 112.—Clay Vessels from Jutland Graves.

there are peculiarities in their building which make it easy for us to distinguish them from these, even without reference to the burial accompaniments. The bodies are generally unburnt; they evidently belong to a period when cremation was giving way to burial; but the bones are generally decayed, because, as stated, most of the graves have not had any stone or slab cover, and are filled with earth. Generally there is only one body in each cist, and there are very few antiquities — nothing but a pin or ring of iron, or a knife of the same metal. But, by way of compensation, the departing one was given a whole set, as a rule, of beautifully finished clay

vessels, small and large, many of which are still unbroken — evidently a selection of household vessels, filled with meat and drink for the use of the deceased on his way to the other world (fig. 112). I have found as many as from twelve to fourteen unbroken vessels in one grave. There are often also heaps of broken ones, placed either in the coffin or buried quite close to it. There are great quantities of them: very often sherds of a score or more vessels, and yet the pieces never make up one single whole vessel. There seems to be no other explanation of this than that all the vessels, used at the funeral feast must have been destroyed, and some of the pieces gathered and buried with the departed, as a sort of memento of the great feast. In my collection I have a great many pots from these "urn-graves," mostly of delicate shapes borrowed from Roman metal urns, and beautifully ornamented. Similar urns are found in great quantities in the large burial places of the same date in Funen, where, however, cremation was still the rule.

The other group of graves is the so-called "skeleton graves" from the islands, especially Zealand. When digging in level ground skeletons are often turned up, buried from three to four feet down, generally several close together, but the groups are always very small. Very often there are no antiquities with them, but sometimes these small burial places have yielded an astonishing number of these, partly of Roman, partly of Germanic origin. Rich finds have been made, especially at Nordrup, near Ringsted, and Vallöby. There are gold and silver objects, especially rings and wonderful buckles; bronze vessels; beads of glass and mosaic, but, above all, some especially beautiful and unique glass vessels, which make the "skeleton graves" famous and are peculiar to them. The name shows, of course, that the bodies were unburnt. The glass vessels are, in some cases, ornamented with artistically executed raised figures in colored glass, representing men and animals in the arena. Gladiators, bulls, lions, and tigers are seen in bold relief; the movements depicted are true to nature, and, strange to say, the vessels, though the workmanship is undoubtedly Italian, have rarely been found outside of Denmark.

From the time of the migration also date all the discoveries in the bogs — the Nydam and Thorsbjerg finds and others. They all

point to great battles, either intertribal or against invading tribes, whose manners and customs must, however, have been similar to those of the natives. It was supposed that the victors collected the spoils of war and sunk them in holy lakes or at the heads of the fjords as an offering to the gods.

But since Sophus Müller's latest investigations a different conclusion has been reached. The things cannot have been sunk in water, as is shown by the condition of the surrounding peat and of the articles of wood. They must have been left lying on the field of battle, an open spot in the forest (a forest since become a marsh), or have been collected in a heap on the ground in the vicinity. After a time the bog has covered them; probably the local stream and surroundings have changed in course of time, so that the growth of the peat has been more rapid. It is not certain that this explanation holds for all cases, but it does for some. But the character of the discoveries is not changed. It is still possible that they are articles given to the gods as a thank-offering for victory.

FIG. 113. — One of the Gold Horns from Schleswig, with Runes. "Ek Hlewagaster Holtingar Horna Tawiðo" (I, Hlewagaster of Holt, made [?] the Horn). (Scale, about $\frac{1}{6}$.)

The most wonderful antiquities that have ever been found in the Scandinavian North are the famous Schleswig gold horns which, unhappily, were stolen and melted down at the beginning of the last century. Heavily have all of us who take an interest in the early history of our country felt this loss; so much the more as the pictorial representations that so richly adorned them were unique, and there existed not even a rubbing of these. There was, therefore, great joy when, a few years ago, it was announced that an article in the style of the gold horns had been found, just as rare and peculiar as these, though of a baser metal of less value (fig. 113).

The big silver vessel, now already world-renowned, from Gundestrup marsh in Jutland (fig. 114), was a unique, and, to science, an invaluable discovery. It was found in pieces in a peat-marsh; the silver plates, of which the upper part consisted, were laid in the bottom of the vessel. It is richly decorated, partly with large, bold figures of men, gods, animals, etc., some of which make up pictures of processions, sacrifices, and hunting scenes. The lower part thus represents an ancient urus hunt, while the outer plates of the sides

FIG. 114. — Silver Bowl found in Gundestrup Marsh. (Diameter 26½ cm.)

each represent a large head of a god or goddess, and the inside ones are covered with pictures, some of which are difficult for us to understand. Unquestionably the vessel dates from the time of the migrations; the figures are partly of classical origin, but barbarized; doubtless the influence was Gaelic. The evidence points to the fact that Gaul was the place from which were drawn the chief features in the style, etc., if it be assumed that it was made here in the North. Nothing further can be said about it at present, though of course conjectures, more or less fantastic, have not been wanting; among these, that of Professor Steenstrup, who endeavors to trace

its origin to the Buddhist regions of central Asia, is the most fantastic and improbable.

At the time of the migrations an ornamentation, founded on imported pictorial representations, and consisting of figures of animals, began to develop in Scandinavia. This continued and was further developed in the subsequent period, "the post-Roman," which is marked by the gradual rise of a style peculiarly Scandinavian, which continued to hold sway till well into the Middle Ages. Sophus Müller and Professor Wimmer especially have within the last few years produced important works concerning the post-Roman and Viking periods. The former has written the history of animal ornamentation, and shown how it arose and developed in Scandinavia, how in time new impulses were brought to it from England and Ireland, from Carlovingian France, and even from Byzantium; how these importations influenced it, how it adopted them and changed them according to requirements, and how from time to time it stiffened and sterilized, only to reawaken into new life and power.

Wimmer, on the contrary, devoted himself to the task of deciphering Runic stones and Runic epitaphs, a field in which his work has been of great importance. However, very little of moment has been discovered about the last period of prehistoric times, that is to say, the Viking period, or the time just preceding it, at least in Denmark. We are poor in relics from that time in comparison with Norway and Sweden; Bornholm alone has yielded anything of importance in this direction. Recently, however, parts of Denmark, and especially Jutland, are contributing evidence; here one thing, there another. One special discovery has been made, namely, a few graves from this period which were hitherto lacking. Christianity was introduced earlier into Denmark than into the rest of Scandinavia; up to a certain point this would explain the scarcity of relics and antiquities from the close of these times, but it was, and is, a riddle, what has become of the riches which the Viking expeditions brought to Denmark, and where the graves of that period are. Would that time and patience might solve this, as they do so many other riddles.

Here I will close. Dare I hope that the reader has received the impression that we in Denmark, as throughout the Scandinavian

North, have labored hard and ceaselessly to shed light upon our early history? Our Parliament has liberally voted money for surveys, investigations, and excavations throughout the country, and for the preservation of relics discovered; also for purchases to enrich the collections in the National Museum at Copenhagen and in provincial museums, as well as for the acquisition of many large and important private collections.

The inhabitants all over the country have, on the whole, assumed an attitude favorable to archeological research. Permission to excavate mounds, graves, kitchen-middens, etc., has generally been willingly accorded. A great proportion of the non-excavated mounds, numbering altogether more than two thousand, has been *given* to the State, sometimes even by poor cottagers. The larger collections have been endowed with many valuable finds made by private people, and many extraordinary objects have been saved from destruction by the sensible and careful proceedings of laymen. It is becoming more and more the general practice when, in digging, articles of value are brought to light, to stop work until scientific assistance is forthcoming in order to secure the proper superintendence of the operations.

Throughout the country are now scattered many public collections, and a very large number of private collectors have assisted in saving much that would otherwise have been lost. Public and private collectors have in general worked well together, and it is seldom that the National Museum does not obtain whatever it wants.

Last, but not least, our archeologists have, as I have striven to show, worked hard and presistently, following in the footsteps of their great forerunners, Thomsen and Worsaae. To them, before all, we owe the fact that the prehistoric times of Denmark are uncovered to us and more clearly illumined than, I suppose, is the case in any other country. It is to them we who love our country and its memories owe an inestimable debt of gratitude.

Since the writing of this brief essay Danish archeologists have by continued explorations brought to light different facts which would indicate that Denmark was — even if sparsely — inhabited at a time preceding the "Kitchen midden period," namely, during the

so-called "Ancylus epoch" when the Baltic was still a lake having its outlet through rivers situated where the belts and sounds now are. A large find in a bog near Mullerup, in the western part of Zealand, not far from the Big Belt, seems to indicate that those people whose remains we find in this dwelling-place were living on timber rafts in the lake which at the time covered the ground now taken up by the bog; also, that they made less use of flint and other stones for weapons and instruments than of wood, bone, and horn. The great number of elks' bones and horns found seems to indicate that the find is *older* than the oldest shell-heaps, and from the kinds of wood found it appears that *pine* was the prevalent forest tree. There were discovered at the same place a series of types of bone harpoons, horn axes, and similar objects, which up to that time were known only as individual finds in peat-bogs, at the bottom of lakes, and in similar places, and which, consequently, now prove to belong to a period of the Paleolithic age that has, so far, been overlooked.

Of reindeer no trace was found in the Mullerup marsh, and we have as yet no proof that man had come to Denmark and the rest of the Scandinavian North during the first post-glacial, arctic epoch; but it would hardly surprise any Scandinavian archeologist if continued explorations should prove man here also to have been the contemporary of the reindeer.

RESEARCH IN VIRGINIA FROM TIDEWATER TO THE ALLEGHANIES

By DAVID I. BUSHNELL, Jr

I. Historical Sketch of the Indians from the Discovery of the Valley, in 1716, to the Close of the French and Indian War, 1763

Alexander Spotswood, Lieutenant-Governor of the Colony of Virginia, and a party of friends, with four Meherrin Indians as guides, left the small frontier settlement of Germana, on the Rapidan, August 29, 1716, to begin their memorable journey over the mountains to the unknown country beyond. They crossed several spurs of the Blue Ridge, then descended into the valley and forded the Shenandoah; but soon they turned back, reaching Williamsburg on September 16.

The mountains in the southern part of Virginia had already been crossed some years before;[1] but the fertile valley of the Shenandoah had remained undiscovered until the journey of Spotswood.

One early writer states that[2] "in the Year 1714, he [Spotswood] went in Person, and, with indefatigible Labour made the first certain Discovery of a Passage over the great Mountains." . . . This either refers to a previous journey or is an error in regard to the date, probably the latter.

Soon settlers penetrated to the country beyond the Blue Ridge, and gradually the frontier of Virginia was pushed westward. In 1734 Orange county was formed to embrace all the lands, without definite bounds, extending westward from what is now known as the "Piedmont" district, between tidewater and the mountains. On November 1, 1738, the county of Augusta was established

[1] "Discoveries Beyond the Appalachian Mountains in 1671," *American Anthropologist*, N. S., vol. 9, no. 1, pp. 45–56.

[2] Sir William Keith, *History of the British Plantations in America*, part 1, London, 1738, p. 173.

to include all the vast territory extending from the Blue Ridge to the Mississippi.

Jefferson,[1] in his classification of the native tribes of Virginia, refers to "the Massawomees, a most powerful confederacy, who harrassed unremittingly the Powhatans and Manahoacs," and gives as their habitat the region extending from beyond the mountains to the Great Lakes. The name Massawomees, or Massawomecs, was derived from Smith's map and writings, and refers to the Iroquois; but instead of the region referred to having been occupied by a single tribe, it was probably frequented by many.

The valley of the Shenandoah was undoubtedly the scene of many encounters between the different tribes in the days before its discovery and settlement, and it is said "the two principal non-resident tribes who frequented this fine country 1716–1745, were the Delawares from the North and the Catawbas from the South. At the time Augusta was settled, 1732, a bloody war was progressing between these tribes, and the Valley was the theatre of action." . . .[2] Some have referred to the Iroquois as the northern tribe then at war with the Catawba; but it is probable that the two tribes, the Delawares and the Iroquois, were united against their common enemy.[3]

The year that Augusta county was formed was marked by trouble with the Indians along the western frontier:

"*At a Council held at the Capital* [Williamsburg] *the 26th day of October, 1738.*

"Mr. Thomas Howard having been sent to the Allaganie Indians upon occasion of the murders committeed by the Indians last summer on the People settled beyond Sherrando [Shenandoah] this day made Report

[1] *Notes on Virginia*, Philadelphia, 1794, p. 136.

[2] J. Lewis Peyton, *History of Augusta County, Virginia*, Staunton, 1882, p. 8.

[3] Governor Keith, in 1722, "being informed that the young Men of *Conestogo* were going out to War, he thought it necessary to hold a Conference with those *Indians*; and accordingly going to their Town, called a Meeting of the Chiefs of the *Mingoes*, the *Shawanese*, and the *Ganaway* (*Conoy*) Indians, . . . In the Close of his Speech he informs them of the News he had heard of their going to War, and absolutely forbids them to go." . . . To this the chief replied "that tho' their Warriors were intended against the *Catawbas*, yet as the Governor disapproved of their going they should be immediately stopped." ([Thomson,] *An Enquiry into the Causes of the Alienation of the Delaware and Shawanese Indians*, London, 1759, pp. 7, 8.)

of his Negotiations there and brought in writing an Answer from the said Indians, wherein they alledge that the said Murther was committeed by the French Indians living on the Lakes." [1] . . .

This is probably the earliest reference to the Alleghany Indians, a term used to designate the Delawares and Shawnee living on, or about, the Alleghany river. But it is not possible to identify the tribe, or tribes, to which they referred as the "French Indians"; they may have been Iroquois, Hurons, or some Algonquian tribe living farther west.

During the same year *The Virginia Gazette* contained various references to murders committed by the Indians along the frontier of the colony.

Some four years later, on December 18, 1742, a party of Iroquois, on their way southward to attack their inveterate enemies the Catawba, were met by a number of settlers, and during the fight that ensued many were killed or wounded on both sides. "The true history of this fight is of considerable historical importance, because it was the first battle of which there is record between the whites and Indians in all the vast territory then belonging to Virginia west of the Blue Ridge. . . ." [1]

By the year 1750 the frontier posts of the colony were some distance beyond the Shenandoah, and Jackson river, or, as it was then called, "Jackson's river," which together with the Cowpasture or "Wallawhutoola" form the James, was evidently the accepted boundary between the settlements and the Indian country.

To prepare against the expected attacks by the French and Indians from that quarter, a chain of forts, or blockhouses, were erected along the border. One of the most important of these was Fort Dinwiddie, which stood on the right bank of Jackson river less than a mile above where the Warmspring and Huntersville turnpike crosses the river, in what is now Bath county, Virginia. Until a few years ago it was possible to trace an underground passage that led from the blockhouse to a spring within the stockade; but now it is no longer visible.[1] Washington, while on a tour

[1] *Virginia Magazine of History and Biography*, vol. XIV, no. 2, Oct. 1906, p. 116.
[2] *Virginia Magazine*, op. cit., vol. XIII, no. 1, July, 1905, pp. 11–12.
[3] J. A. Waddell, *Annals of Augusta County*, 2d ed., Staunton, 1902, p. 137.

of inspection, once visited the fort and referred to it in a letter to Dinwiddie, a part of which is here given:

"WINCHESTER, *Saturday, Oct'r ye 11th, 1755.*

. . . "In a journey from Fort Cumberla'd to Fort Dinwiddie, which I made purposely to see the Situation of our Frontiers, how the Rangers were Posted, and how Troops might be dispos'd of for the defence of the Country. . . . "[1]

And three months later Washington again wrote to Dinwiddie, dated from "Alexandria, Janua'y 13th, 1756," at which time he referred to the building of other forts —

"which will be a means of securing near 100 Miles of our Frontier, exclusive of the Comand at Fort Dinwiddie, on Jackson's River, and, indeed, without a much greater number of Men than we have a visible prospect of getting, I don't see how it's possible to think of passing the Mountains or acting more than defensively. . . . "[2]

And that the fort was deemed one of the most important of the colony's defenses, was shown July 27, 1756, when it was ordered that its garrison should be sixty men, with one exception the largest number allotted to any of the frontier posts.[3]

During the year 1753, emissaries are said to have come from the tribes beyond the Alleghanies to persuade the Indians then in the valley of the Shenandoah to cross the mountains and join them along the Ohio. In 1754 all the valleys of the Blue Ridge were deserted and nothing more was heard of the Indians during that or the following year.[4]

Crossing the mountains and entering the Ohio valley they had met the agents of the French, by whom they were soon claimed as allies in the war that was about to be waged against the English colonies.

On January 2, 1756, Lieutenant-Governor Dinwiddie addressed a letter to Governor Morris of Pennsylvania, which throws much light upon the condition of affairs among the frontier settlements at that time. A part of the letter reads thus:

[1] The Official Records of Robert Dinwiddie, *Virginia Hist. Soc.*, Richmond, 1884, vol. II, p. 236.

[2] Ibid., p. 315.

[3] Waddell, op. cit., p. 136.

[4] Thos. Bruce, *Southwest Virginia and the Shenandoah Valley*, Richmond, 1891, p. 198.

"Some time since the Cherokees sent four of y'r Warriors to me assuring me of y'r steady F'dship to y'r Bros., the Eng. I sent them from y'r with new Cloaths and some Presents; sent a Person with them, and I represented the cruel Barbarities comitted by the Fr. and Ind's on our back Settlem'ts. W'n they were properly convinc'd thereof they took up the Hatchet and declar'd War ag'st the Fr. and Shawnesse and sent in to Augusta County 130 of y'r Warriors to protect our Front's. These People proposed going to attack the Shawnesse in their Towns, w'ch I approv'd of and order'd four Companies of our Rangers to join them, and sent up some Guns, Powder, Lead and Match Coats, and gave direct's for Provis's. . . ."[1]

The letter, continuing, refers to the necessity of sending commissioners among the Catawba and the Cherokee to make certain of their loyalty to the English. The former tribe had already proposed sending a thousand warriors to join the English forces.

During the years of war which followed, the settlers along Jackson river often suffered from attacks by the Indians, and in September, 1756, the settlement at or near Fort Dinwiddie was attacked, thirteen of the settlers being killed, while twenty-eight were taken captive.[2]

In the spring of 1757 the Roanoke settlement, some miles below Jackson river, was destroyed by a party of Shawnee, and Governor Dinwiddie soon ordered out a company of militia, many of the members of which came from Fort Dinwiddie, to pursue the Indians. The campaign which followed became known as the "Sandy Creek Voyage."[3] But the Shawnee evidently continued their attacks upon the scattered and often widely separated settlements.

There is an entry in the Journal of the Virginia House of Burgesses, dated October 15, 1760, stating that "it appears to the Committee that in the Month of October, 1759, a party of Shawnees Indians made an Incursion into the County of Augusta. . . ."[4] This unquestionably refers to the murders committed by the Shawnee chief Cornstalk and his warriors in the vicinity of Carr's creek, east of Jackson river, on October 10, 1759.[5]

[1] *Dinwiddie Papers*, vol. II, pp. 309–310.

[2] Waddell, op. cit., p. 139.

[3] Alexander S. Withers, *Chronicles of Border Warfare*, Cincinnati, 1895, p. 81.

[4] *Virginia Magazine*, vol. XV, no. 3, Jan., 1908.

[5] Withers, op. cit., p. 173, note.

Cornstalk, one of the greatest of the Shawnee warriors, belonged to that branch of the tribe then living along the Scioto, in Ohio. In 1763, during the Pontiac trouble, he again led a large party from beyond the Ohio against the Virginia frontier, which destroyed the settlements along Muddy creek and continued on to Jackson river; but finding the settlers prepared for attack, they again passed on to Carr's creek, the scene of the outrages committed by them four years before.[1]

The following year some Iroquois and Delawares invaded the Jackson river valley, but were soon driven out by militia from Fort Dinwiddie. The Delawares at that time were living along the Muskingum and on other streams in eastern Ohio, having moved from the eastward some years before. At that time (1764) they were still under the influence of the French. And for many years the frontiers of Virginia were not safe from attacks by the western tribes.

About the year 1768 or 1769, the Lords of Trade and Plantations at London sent to Lieutenant-Governor Francis Fauquier of Virginia a series of seventeen questions relating to existing conditions in the colony.

The questions, and answers as returned by Fauquier, form a manuscript volume of 41 quarto pages which has never been published. Although no date is given, the replies were probably written during the year 1769.

The thirteenth question, relating to the Indians of Virginia, together with Fauquier's reply, is as follows:[2]

"13 What is the No. of Indians Inhabiting those parts of America lying within or bordering upon your Colony? What Contracts or Treaties of Peace or Friendship have been made with them, or are now in Force? What trade is carried on with them, and under what regulations, and how have those Regulations been established?

[Answer] "The number of Indians residing in the known parts of this Colony is very small, there being only some remains of the Eastern Shore and Pamunky Indians, who are so far civilized as to wear European dress, and in part follow the customs of the Common Planters. Besides

[1] Rev. W. H. Foote, *Sketches of Virginia*, Philadelphia, 1856, p. 159.

[2] The manuscript is now in possession of Messrs Dodd, Mead & Co., New York, by whom the writer has been courteously permitted to reproduce this section.

these there are some of the Nottoways, Meherrins, Tuscaroras and Saponeys; who tho' they live in peace in the midst of us, lead in great measure the life of Wild Indians. The number of all these decrease very fast, owing to their great fondness of Rum. The nearest Indians who do not live among us, are the Shawanese, situated on the N. West towards the Ohio; and the Cherokees inhabiting the South West in the Provinces of the Carolina's. The Shawanese are computed to be about 500 fighting men, the Cherokees about 4000 including the upper, middle, and lower Towns. There is a Treaty of Peace subsisting with the six Nations, and some assurances given to the Ohio Indians by the Commanders of his Majesty's Forces in those parts. There is a Treaty made by the late Governor Dinwiddie, between his Majesty's Subjects and the Twightwees, living a great way to the Westward of the Inhabited parts of this Colony. There is also a Treaty of Peace lately made with the Cherokees by the Governors of the Carolina's. The Trade between this Colony and the Indians is at present inconsiderable, tho' it seems to be increasing. The Inhabitants of Pensylvania have the chief Trade with the northern, and those of Carolina with the Southern Indians. What Trade we have at present is open and under no regulations. The Legislature had prepared a large Cargo to Trade with the Cherokees under the public inspection, but on the late Rupture that Scheme was entirely dropt. All that is now done is the recommending it to our Traders to be cautious in supplying them with Ammunition. I did recommend it to my Assembly, to pass some Act, conformable to that passed by the Assembly of South Carolina, to regulate the Trade with the Indians, but they declined it."

II. Indications of the Period of Indian Occupancy of the Valleys

From the above brief historical sketch it will be seen how, during the early historic period of what is now the western part of Virginia, many tribes traversed, or frequented, the valleys of the Blue Ridge; and it is not unreasonable to suppose that before the discovery and settlement of the region by Europeans, it had often been visited by bands from various Indian tribes while passing from one locality to another. Although no reference to permanent Indian settlements in the valley of Jackson river at the time of its discovery is known, it is nevertheless difficult to attribute all the remains found there to migratory bands: probably at an earlier time the section was the permanent home of some tribe.

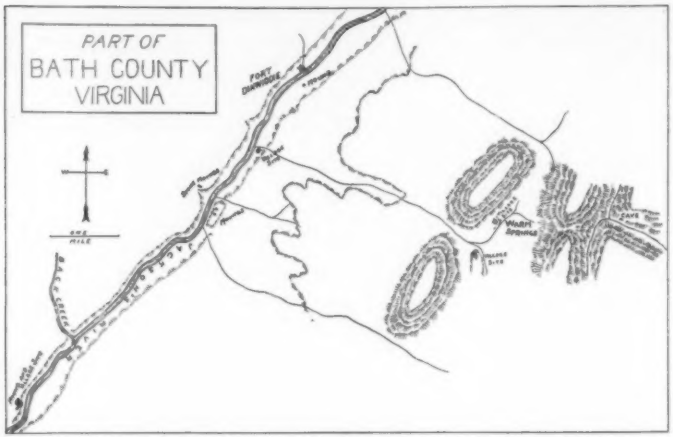


FIG. 115. — Map showing the site of Fort Dinwiddie, and mounds and village sites near Warm Springs, Virginia.

The old trail, along which war-parties from the North or South would pass, followed the valley of either Jackson river or the Cowpasture (Wallawhutoola); but it was probably the former, and over it Washington must have traveled when in 1755 he journeyed from Fort Cumberland to Fort Dinwiddie.

Kercheval has left a rather definite account of the trails in the northern part of the valley. He says in part:

"The author has seen and conversed with several aged and respectable ndividuals, who well recollect seeing numerous war parties of Northern and Southern Indians passing and repassing through the valley. Several warrior paths have been pointed out to him. One of them led from the Cohongoruton (Potomac), and passed a little west of Winchester southwardly . . . Another crossed from Cumberland, in Maryland, and proceeded up the Wappatomack or Great South Branch valley in the counties of Hampshire and Hardy. . . ."[1]

Now, if this latter trail had continued in the same general direction, it would have led down the valley of Jackson river. Consequently that valley may be regarded as having been one of the principal thoroughfares between the northern and southern regions both before and during colonial days.

[1] Samuel Kercheval, *History of the Valley of Virginia*, Winchester, 1833, p. 51.

Sites of camps or settlements, and mounds of different forms, are quite numerous throughout the valleys, and, as would be expected in a region visited by various tribes, the objects lost or buried at different times are of many forms and materials.

In the vicinity of the Warm Springs, Bath county (at one time a part of Augusta county), Virginia, mounds and sites are rather plentiful. All that were identified or located are noted on the accompanying map (fig. 115).

The Warm Springs are about four miles due east from Jackson river. The water from the springs forms a narrow run which flows into the river; but between the springs and the mouth of the run there is a fall of nearly three hundred feet; the river at that point is approximately 2200 feet above sea-level.

The site of old Fort Dinwiddie is shown on the right, or northwest, bank of Jackson river. Opposite it, near the center of a broad bottom, is an artificial mound consisting entirely of earth. Its dimensions are about 45 feet in diameter and two feet in height, but it is said that years ago it was from five to seven feet high. The surface has been cultivated for nearly a century.

Quite a number of objects of stone have been found from time to time on the surface of the mound or in the surrounding field, which was probably at one time the site of an Indian settlement. A few years ago a rather crude, and apparently unfinished, stone object belonging to the general class designated as "bird-stones," was found upon the surface of the mound, having been exposed by the plow. This specimen, which is shown in figure 116, is made of a grayish slate and is of a rather unusual type. There is a more highly finished example of the same form

FIG. 116.— Bird-stone. (Three-fourths size.)

and of similar material in the Smithsonian collection (No. 34,857), which was found near Middleton, Dauphin county, Pennsylvania. In the latter specimen there are two perforations, one at each end of the flat base; these do not appear in the Virginia example, although they would probably have been added later.

A small chipped celt having a ground cutting edge was found either on or near the mound.

Throughout the valley arrowheads, drills, and other small chipped implements are quite numerous, especially in the bottom on the left bank of the river, extending a mile or more below the mound, opposite Fort Dinwiddie. They are of many types and materials. Seven specimens, all found within a short distance of the mound, are shown at the top of plate XXXI, 1. The drill, at the right (length $3\frac{3}{16}$ inches) is an especially fine piece of chipping.

Although many of the points found in that region may have been made elsewhere, there was evidently a quarry a short distance northward, whence the Indians obtained material for the making of implements. The locality was described in an article written about sixty years ago, and which was probably the earliest published account of the Indian remains in that part of Virginia:

"On the lands of Mr. John Sitlington, in Crab Bottom, Highland county [adjoining Bath county on the north], there is an area of perhaps a hundred acres, all dug over in pits. This was the great treasury of the dark clouded flint-stone, out of which the Indians made those arrow-heads of that color found all over our state. This rock is there in great perfection, and in inexhaustible quantity."[1]

A camp site was located on the south side of Warm Spring run, on rising ground about a hundred yards from Jackson river. Many chips and some broken implements were found; but as the ground was thickly covered with clover it was difficult to examine the surface.

Near the southern end of the adjacent field, and only a short distance from the river, was discovered a fragment of a steatite vessel: the only example found in the valley. As steatite is not found in the mountains of Virginia, and occurs only in the Piedmont

[1] Article signed "Montanus" in *Virginia Historical Register*, vol. III, no. 1, Jan. 1850, p. 37.

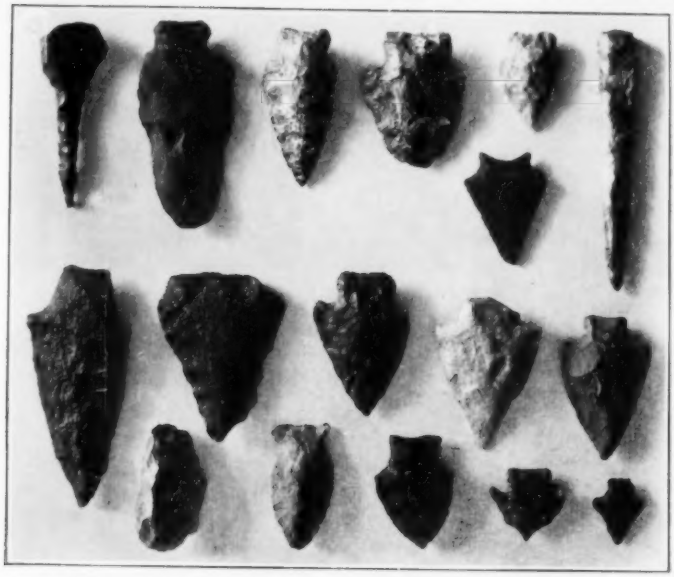


FIG. 1. — Above, seven specimens from near mound opposite Fort Dinwiddie. Below, ten pieces from near Warm Springs. (One-half size.)

FIG. 2. — Steatite bowlder near Chula, Amelia co., Virginia

district, the utensil must necessarily have been carried a considerable distance.

Between the Warm Springs run on the north and Cowarden run on the south there is a small watercourse which enters the river about half a mile above the latter run. On the eastern side of the river, extending northward from Cowarden run, there is a very prominent ridge which rises about forty feet above the river. The top is approximately thirty acres in extent and is quite level; but on all sides it is rather abrupt, while in some places it is deeply gullied. Evidently the northern part of the level area was the site of an Indian settlement. Two artificial mounds are situated there, on the side toward the river, as may be seen on the map.

The more northerly of the two mounds was evidently formed originally solely of large stones, making a pile about two feet in height and ten or twelve feet in diameter. But the spaces between the bowlders became filled with vegetal mold and earth, until it appeared as a mound with stones projecting from the surface. A trench was made from without the eastern edge to near the center, and extended well below the original surface, or sod line; but nothing was discovered to indicate a burial of any sort, nor were any objects of stone or pottery found.

The second mound had an elevation of about fifteen inches and a diameter of ten feet. Unfortunately the surface was covered with brush, and several small oaks were growing near the center, the mass of roots resulting from this growth making it rather difficult to excavate and to examine the contents of the mound. A part of it, however, was opened.

In the center of the mound there was a small space that had been covered with pebbles, probably carried up from the river; they were rather uniform in size, and averaged about six inches in diameter. These had evidently been placed upon the original surface and the earth thrown over them. The stones did not show any indications of fire, therefore they could not have served as a hearth. But the most interesting feature of the mound was the occurrence of many chips of flint and quartzite throughout the portion that was excavated, and the same condition may exist through the entire structure. It is difficult to explain this peculiarity, and the only

plausible theory is that the earth composing the mound had been scraped from the surrounding surface; that implements had been made there, the chips from which had remained upon the surface, later to become mixed with the earth when the mound was formed.

The area immediately surrounding the mounds is covered with heavy timber, and the surface has probably never been cultivated; consequently it is not possible to say what other evidence of an Indian encampment may exist there.

On the right bank of the river, a little above the two mounds just described, is a rather unusual form of stone heap, or, more correctly, double mound. It appears as two piles of stones, each about ten feet in diameter; but the edges of the two parts touch, thus forming a structure in the form of a figure 8. The entire mound is composed of quite large stones, some of which weigh probably as much three hundred pounds. Many were removed and an excavation made; but no evidence of a burial and no objects of any sort were discovered.

This mound is near the top of the first ridge rising from the river bottom. It is on a prominent point at the northern side of a ravine, and from it a magnificent view of the river valley is afforded. It is not possible to say for what purpose or reason the rocks were brought together; but there is a tradition in the valley that it was erected to commemorate the meeting of two tribes which gathered there in council many years ago. The old trail between the South and the North probably passed between the river and the foot of the ridge upon which the mound is situated, consequently there may be some foundation for the legend. On the other hand the stones may have served merely to mark a trail over the mountains.

Some broken arrowpoints were found in the bottomland near the river.

Back creek, the largest tributary of Jackson river, joins that stream a few miles below the mounds. The country through which the creek flows is very rough and broken: at its mouth the cliffs rise several hundred feet above the water.

An Indian settlement is said to have been situated on or near the creek, some miles above its mouth, and many objects are re-

ported to have been found there, including a long copper needle. Copper objects have already been recorded as coming from that same general area.[1]

Evidently one of the most important sites in the valley is situated about a mile and a half below the mouth of Back creek, on the right bank of Jackson river. At that point the cliff rises abruptly from the water to a height of about one hundred feet. The top is rather level, and at some time was occupied by an extensive village. Until a few months ago a very large stone mound stood upon the site, but it was removed to make room for buildings that have since been erected.

A large number of unusually interesting specimens have been found from time to time in the vicinity of the stone mound, but from all accounts nothing was discovered in the mound when it was removed.

A collection of implements and other objects, all found on that site, was made by the late owner of the property, but it has since become scattered and only a few pieces can now be traced: these are figured in the present article.[2]

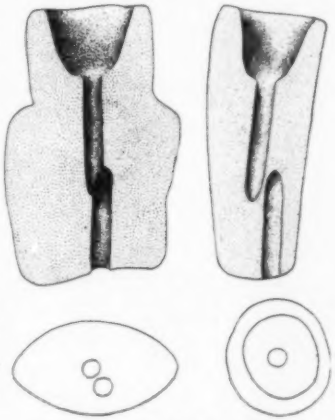


FIG. 117.—Unfinished steatite pipe. (One-half size.)

Among the specimens is the unfinished pipe of grayish steatite represented in figure 117. It is of a type not unusual in that gen-

[1] According to Professor Fontaine, of the University of Virginia, native copper occurs in a felsitic rock along foot-hills of the Blue Ridge: this would have been the Indians' source of supply. Thomas (Mound Exploration, in *Twelfth Ann. Rep. Bur. Ethnology*, p. 426) figures a copper bracelet and copper gorget from a mound in Kanawha county, West Virginia, and on p. 412 refers to "copper beads made of thick wire bent in a circular form" from a burial in a mound on Lins creek in the same county. Fowke (Archeologic Investigations in James and Potomac Valleys, *Bull. 23, Bur. Am. Ethnology*, 1894) figures a copper crescent from a mound in Page county, Virginia.

[2] The specimens referred to are now owned by Mr Boyd McDannald, to whom the writer is indebted for valued assistance.

eral region. In the drawing it will be seen that the perforation was not completed: it was drilled from both ends, evidently with a solid drill, but the two holes did not meet. This may account for the fact that it was never finished.

In figure 118 is shown a very good example of a type of pestle which may have been carried from either the North or the South. The material is brownish argillite. Its length is 12¾ inches.

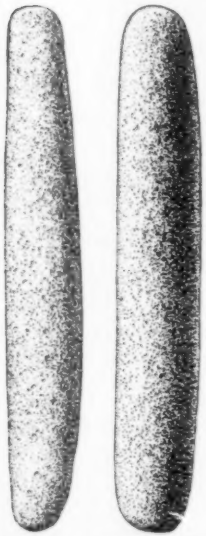


FIG. 118. — Pestle. (One-quarter size.)

But the most interesting specimen is that represented in figure 119. It is made of a dark greenish diorite, and the workmanship is exceptionally fine. It is what might be termed a double celt, as it has two cutting edges. The surface is well polished, and, with the exception of two small chips, one from either end, the specimen is perfect. The dimensions are: length 12¼ in., width 1 3/16 in., thickness 1 3/16 in.

Another example, similar in form, of equally good workmanship, and only two inches shorter, has already been figured.[1] It was found near the Susquehanna river, in Luzerne county, Pennsylvania.

It is an interesting coincidence that examples of the two unusual types — the "bird-stone" (fig. 116) and the diorite implement (fig. 119) — should also occur close together in Pennsylvania, within the territory at one time claimed and occupied by the Conestoga, or Susquehanna, and allied tribes. Arrowheads from the two regions are also quite similar in form.

A large stone mound, thirty feet in diameter and eight feet in height, similar to the one which formerly stood on the Jackson river site, is said to exist near Milton, Northumberland county, Pennsylvania, on the Susquehanna.[2]

[1] Christopher Wren, The Stone Age, *Proc. and Coll. Wyoming Hist. and Geol. Soc.*, vol. VIII, pl. I, Wilkes-Barré, 1902.

[2] Thomas (*Catalogue of Prehistoric Works*, 1891, p. 192) also refers to a mound near Nanticoke, Luzerne county, Penn., quoted from the *Smithsonian Report*, 1881, p. 686.

The great similarity of objects of uncommon forms and the occurrence of stone mounds in both valleys may be only a coincidence, but more probably they should be regarded as having been made by the same people.[1]

Only one small fragment of pottery was discovered during the examination of the sites in Jackson valley. This sherd, showing the impressions of cords, was found upon the surface in the bottomland, north of Cowarden run and only a short distance from the river bank.

FIG. 119. — Diorite implement. (One-quarter size.)

As previously mentioned, the Warm Springs are about four miles east of the river, in a valley at the foot of a pass leading across the mountain to the Cowpasture or Wallawhutoola. The old trail, probably traversed during generations by the Indians, may still be traced over the mountain and down the eastern slope.

'The first road over the mountains, leading from the east, was laid out in 1772 and extended from Jennings Gap — north of Staunton — to Warm Springs.

In the immediate vicinity of the springs many arrowpoints are and have been found, and two years ago, when an excavation was made less than one hundred feet from the largest spring, a number of specimens were discovered. A few years ago a cellar was dug on slightly rising ground just beyond this site, and several human skeletons were unearthed. Nothing appears to have been found in contact with the burials, but they are unquestionably the remains of Indians.

Just south of the springs, within the grounds surrounding the new Bath County court-house, were found a number of small chipped implements, ten typical examples of which are shown in plate XXXI,

[1] Mr J. N. B. Hewitt, of the Bureau of American Ethnology, has suggested that probably the "French Indians" alluded to in 1738 (see p. 533) were the Conestoga; if so, it is another link between the occupancy of the two valleys.

1. The site was evidently occupied by a small village: it is rather high, well supplied with water, and occupies a commanding point.

There are several caves not far from the springs, the largest being across the mountain, toward the east, on the old trail; but none appears to have been occupied. No trace of wood ashes could be discovered.

And so it appears evident that before the coming of the European colonists the valley of Jackson river had been much frequented by the Indians. At an early day it may have been the permanent home of some tribe; but there are no records of native settlements in the valley at the time of its discovery, nor is it probable there were any after it became the highway between the North and the South. Consequently many of the broken arrowpoints and other objects, likewise the traces of small encampments which occur along the banks of the river, should be considered as having been left by migratory bands, or war-parties, while moving from place to place.

III. Between the Mountains and Tidewater

The valley of the James, between the mountains and the falls at Richmond, was near the middle of the territory of the Monacan confederacy, and it was of this region that Yardly wrote, in November 1610, when he alluded to an expedition "up unto a famous fall or, cataract of waters, where leaving his pinnasses & Boats safe riding, so purposely to loade up go into the Land called the Monscane."[1]

As a detailed account of investigations in that region was published some years ago,[2] the present notes are merely intended to supplement the work already done.

Midway between Chula and Amelia, in Amelia county, Virginia, about a mile east of the railroad, is a large deposit of steatite whence the Indians obtained material for the manufacture of utensils.[3] Over an area of several acres surrounding the outcropping, the sur-

[1] "Virginia from Early Records," *American Anthropologist*, 1907, vol. 9, no. 1, p. 37.

[2] Gerard Fowke, Archeologic Investigations in James and Potomac Valleys, op. cit.

[3] Mr F. H. Cushing spent some time at the site in 1876, but no detailed account was ever published (Fowke, p. 10). For references to the steatite quarries of Virginia, see W. H. Holmes, Stone Implements of the Potomac-Chesapeake Tidewater Province, *Fifteenth Rep. Bur. Am. Ethnology*, p. 113 et seq.

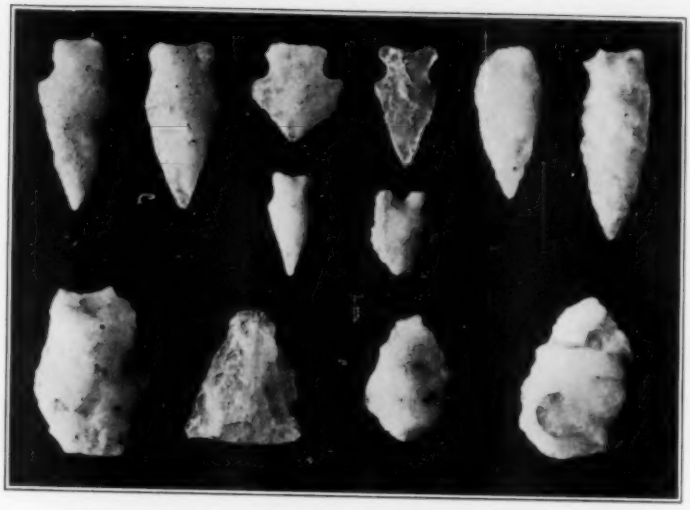


FIG. 1.—Above, eight finished points. Below, four rejects from area shown in figure 2. (All one half size.)

FIG. 2.—Workshop; white quartz on the surface. Near Chula, Amelia co., Virginia.

face is strewn with pieces of the stone which had been carried there. Many are fragments of unfinished vessels, evidently broken during the process of making. Others are only rough blocks that had been removed from the quarry.

One large bowlder, about six feet in height, remains near the edge of the old quarry and shows distinctly where many pieces had been removed by the Indians. A photograph of it is reproduced in plate XXXI, 2. A large piece had been removed from near the center of the side shown in the picture, and the spot, as well as several others, is clearly represented.

It is said that when the site was first discovered, many stone implements were scattered over the surface; but few are now found. One example, made of a dark quartzite, is shown in figure 120.

FIG. 120.—Implement from the steatite quarry. (One-half size.)

A short distance beyond the steatite quarry, across a small creek which flows into the Appomattox river, is an area about one hundred feet square that is covered with broken quartz. The greater part of the material was probably artificially fractured, and many of the more finished specimens are said to have been collected and carried away at different times. A photograph of the site is reproduced in plate XXXII, 2, and at the bottom of figure 1 of the same plate are four "rejects" found on the surface between the two trees. At the top of the same figure are eight finished arrowpoints that were found in the surrounding fields and which were probably made at that place.

There are several interesting sites not far from Charlottesville, Albemarle county.

Tradition places an extensive village on the right bank of the Rivanna, just north of Charlottesville, near an old ford. But as the bottomlands have often been overflowed, and also cultivated for many years, it is now quite difficult to find material of any sort. Some chips of flint and quartz, and a few fragments of pottery, were found on a slight rise. Many perfect implements are said to have been recovered from the site in former years.

A space of several acres in the lowland is even now known as the "Indian Grave," and one old negro relates that she remembers when a child, living on the old plantation, seeing several bands of Indians, at different times, camping on the site. Indeed it is highly probable that at one time a large town belonging to the Monacan confederacy was situated there. From that point down the Rivanna to its confluence with the James is a distance of about thirty miles, and there, in 1608, was Rasauweak — one of the principal Monacan towns.

WASHINGTON, D. C.

ETHNOLOGICAL AND ARCHEOLOGICAL NOTES ON MOOSEHEAD LAKE, MAINE

By JOSEPH D. McGUIRE

Moosehead lake is the largest of the many great lakes in Maine. Lying between the counties of Somerset and Piscataquis, it has a shore-line of several hundred miles, and innumerable islands varying in size from a few square rods to hundreds of acres. There are two outlets to the lake, known respectively as the eastern and the western. The flow of water at each outlet is regulated by a dam provided with a sluice and numerous gates that may be raised or lowered at will. The water below the outlets forms the source of Kennebec river. The eastern outlet of Moosehead is much the larger, and through it the winter's cut of logs from the wooded shores is sluiced as soon as the ice disappears in the spring, and is floated down the Kennebec to the sawmills and pulpmills two hundred miles below. The timber thus handled during the last season exceeded eighty million feet, board measure.

The territory under discussion has been from time immemorial the home apparently of Abnaki tribes. The name Abnaki was used by the English and French of the colonial period to designate a confederacy centering in the present state of Maine, and was used by the Algonquian tribes to include all those of their own stock resident on the Atlantic seaboard, more particularly the Abnaki in the north and the Delawares in the south.

It has been supposed by some that the Abnaki were originally residents of Canada; but this is an error, as indicated by the name itself, which signifies "country of the east," or, as a tribal appellation, "easterners." According to Maurault[1] the Abnaki called Moosehead lake *Mousinibes*, or, according to the English, "Moose lake." The ending *-es* in all Algonquian dialects signifies 'small,' 'little,' and would therefore indicate that the definition of *Mousinibes* is 'little lake of the moose,' possibly referring to Indian pond, lower

[1] *Histoire des Abenakis*, 1866.

down the Kennebec. In the Jesuit Relation of 1647, Lalemant says, speaking of the Abnaki: "At the beginning of the year, when these good people were preparing themselves for their great hunt. . . So there they were in the field; they ascend eight or ten days' journey along the river of Kinibeki. They enter a great lake, where they appoint their rendezvous after their hunt. Having separated into several bands, they declared war on the deer, the elk, the beaver, and other wild beast."[1] Though this reference may be to Moosehead lake, the name does not occur in the Jesuit Relations, nor does it appear on Champlain's map of 1632 or indeed on maps as late as 1750.

At a later period the term Abnaki was employed, in a still more restricted sense, to designate the natives along the Kennebec. The word Kennebec signifies "at the long water," and might apply with equal force to the lake, to the Kennebec or the Penobscot, or in fact to any of several lakes in this immediate region.

The upper part of the Kennebec has a very rapid current; in fact it may be described as torrential, for it would be a matter of the greatest difficulty to navigate it with an Indian birchbark canoe. Its waters are so clear that one may readily distinguish bowlders from broken stones lying on its bed; the contrast between the light yellow, often approaching white, of the rhyolite, and the somber hue of the much more numerous primary rocks is remarkable; yet neither in the bed of the stream nor in or on its banks were implements of any description found, though they were abundant along the shores of the lake.

A short portage from the upper end of the lake brings one to the Penobscot river, the difference in elevation between the lake and the river being slight. The Penobscot tribe formed a part of the Abnaki confederacy. Its name, according to Vetromile, is derived from *Pānnawānbskek*, meaning 'it forks on the white rocks'; or from *Penaubsket*, 'it flows over rocks.' This tribe was probably the most populous of the Abnaki confederacy, and was closely related in language and customs to the Norridgewock who lived on the Kennebec. A band of the Penobscot formerly lived on Moosehead lake, for which reason they were known as Moosehead Lake Indians.

[1] *Jesuit Relations and Allied Documents*, vol. xxxi, pp. 194–95.

Another short portage from upper Penobscot river brings one into the Allegash, down which a canoe may be floated into the St John, where, according to Maurault and the earlier maps, there lived a tribe known to the French as "Etchemins," another Abnaki group. On Owen's map of 1750 there is no indication of Moosehead lake, though the Etchemin are located beyond the headwaters of the two great rivers of Maine. On this map the name is spelled "Flechemins," as if to signify that these people were arrow-makers *par excellence;* the spelling however is evidently a misprint. Implements made from the rhyolite of Mt Kineo at Moosehead lake are said to be found as far north as St John, New Brunswick. Near the mouth of the Penobscot and on the shore at Castine, as well as in the shell-heaps near by, implements of dark green rhyolite are found, and also bowlders of drift material of apparently the same mineral, weighing in some cases as much as a ton or more.

Mr C. C. Willoughby, of the Peabody Museum, Harvard University, has located and described[1] four aboriginal workshops existing in the talus of Mt Kineo, where implements have been made. He refers also to the finding of implements of the same material on all the camp-sites and in all the shell-heaps examined by him in the state, as well as in the graves which he examined in Hancock county. Mr Willoughby found no evidences of quarrying in the mass of the mountain, all indications pointing to the talus at Mt Kineo as the great source of the material for implement-making. Although erratic bowlders are abundant about the shores of the lake, in Mr Willoughby's belief they furnished only a limited supply of the raw material.

Mt Kineo rises 1700 feet above tide, and 1000 feet above the lake. The whole mass appears to be composed of a felsitic rhyolite, erratic bowlders of which are widely distributed throughout Maine, New Brunswick, and even beyond. The name Kineo signifies 'great eagle' in the Abnaki language, probably from some fancied resemblance of the mountain itself, or of some part of it, to the bald eagle. On the southern side the mountain is about a mile in length, and has a talus from two hundred to three hundred feet in width, the slope of which is composed of small fragments inter-

[1] *American Naturalist*, Mar., 1901, pp. 213–216, with three plates.

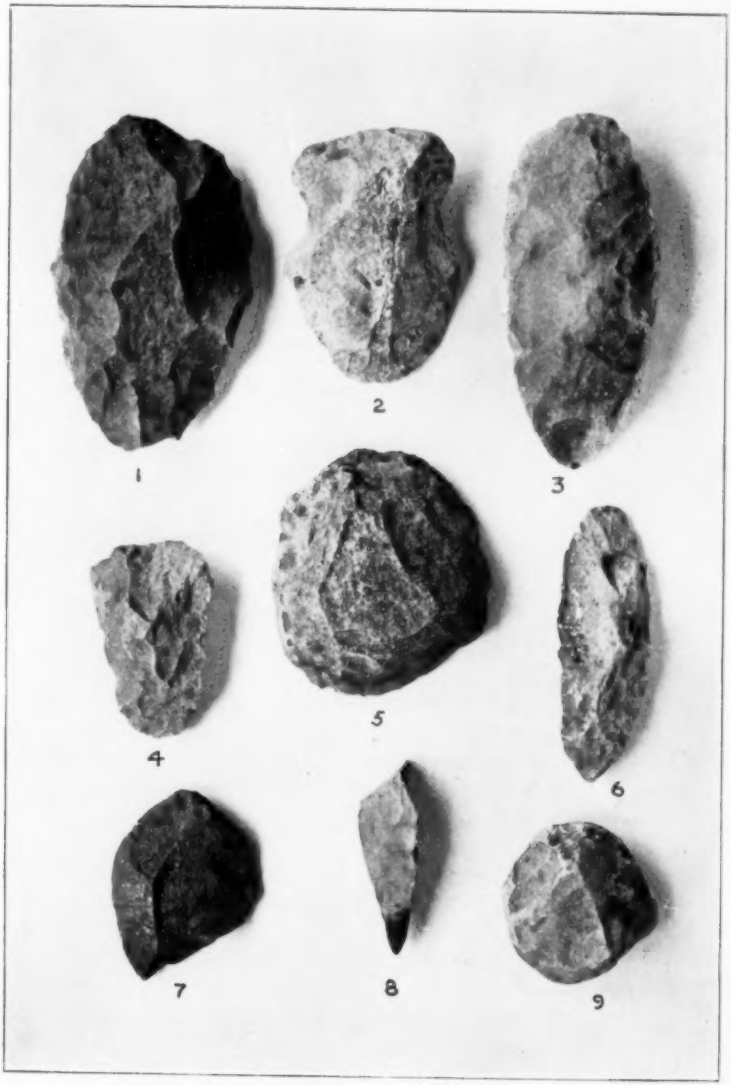
mixed with larger masses of the rock that have fallen from above. On the precipitous southern side of the mountain are seen numerous bald patches of the rhyolite in places where the cliff is too precipitous to support vegetation or where the frost has loosened the stone. The distance from the outlet to Mt Kineo is nine miles in an air line.

A visit extending over two months during last spring and summer, at the eastern outlet, offered unusual opportunities for archeological investigation of local conditions, owing to an exceptional period of drought.

During the latter part of May and in early June the water of the lake was at an unusually high stage, no beach being anywhere visible; in August and September, however, owing to the lack of rainfall, the depth of water was lowered as much as an inch a day. Due to the very gradual shelving of the bed of the lake, a rocky beach developed and finally attained an average width of a hundred feet or more. On the beach and in the immediately adjacent water numerous aboriginal stone implements in various stages of development were found. Of four hundred specimens picked up, all but four are of rhyolite; associated with these were numerous fractured pieces, as well as bowlders, many of which latter had been purposely broken in order to test their suitability for producing spalls for subsequent flaking into implements. The rhyolite bowlders are generally of small size when compared with the bowlders of primary rocks, which occur in infinitely greater numbers, the former weighing tens and the latter hundreds of pounds.

The color of the rhyolite in the bed-rock is dark green, but along the shores of the lake and in the Kennebec river it has weathered until it is almost white. In a number of cases implements taken from the water were light yellow on their upper surface, whereas the under-side was light gray or green, as though they had lain unmoved for centuries. The numbers of rhyolite bowlders lying along the beach would indicate that erratic blocks have been more extensively employed for implement-making than has been supposed.

The specimen-yielding area is limited to a few hundred yards along the lake shore, beginning a hundred yards from the dam on both sides of the outlet; and to less than fifty yards of beach at



RHYOLITE OBJECTS FROM MT KINEO, MAINE

Squaw point, a mile from the outlet. The uniformity in material and workmanship being similar, the collection is treated as homogeneous.

On the beach southeast of the Outlet Hotel, and two hundred yards from the point where most of the implements were found on that side of the lake, and away from other pieces of the rhyolite, a cache of twenty-nine pieces was unearthed, the specimens ranging in color from almost white to a dark gray. The lighter color being uppermost, it appears likely that the weathering is due to light rather than to chemical action of the water.

Practically all these specimens exhibit more or less artificial work. The largest one in the cache is of the type shown in figure 1 of the accompanying plate, measuring about seven inches in extreme length. The cache was situated within a natural circle of bowlders, and could have been found readily by the owner who had piled the implements so neatly one upon another.

A single spearpoint in two pieces was found upon a rock at Squaw brook, with the refuse chips from its manufacture lying on the ground below.

Figures 1, 3, and 6, of plate XXXIII, and figure 11 of plate XXXIV, represent specimens belonging to the well-known lanceolate type, probably better known to some as the "cache" type. Of these, one hundred and five were found, ranging in length from 7½ in. to 1½ in., and in width from 4¼ in. to 1⅞ in., with a thickness of from 1½ in. to ¼ in. Twenty of these specimens, all entire, were found within a space of fifty yards on the eastern side of Squaw point, near a huge bowlder, through which runs a vein of quartz, that to an Indian might well suggest an idol to which offerings should be made. A single broken spearpoint was found here, and it is said that an ax and a gouge, as well as arrowheads, were also picked up years ago.

Certain of the characteristics of the type illustrated connect them apparently with the so-called "turtlebacks," although figure 11 is a perfect specimen of the type commonly known as "cache implements," and which in the Middle States are often found in numbers together. A similar implement on the Pacific coast is found hafted.

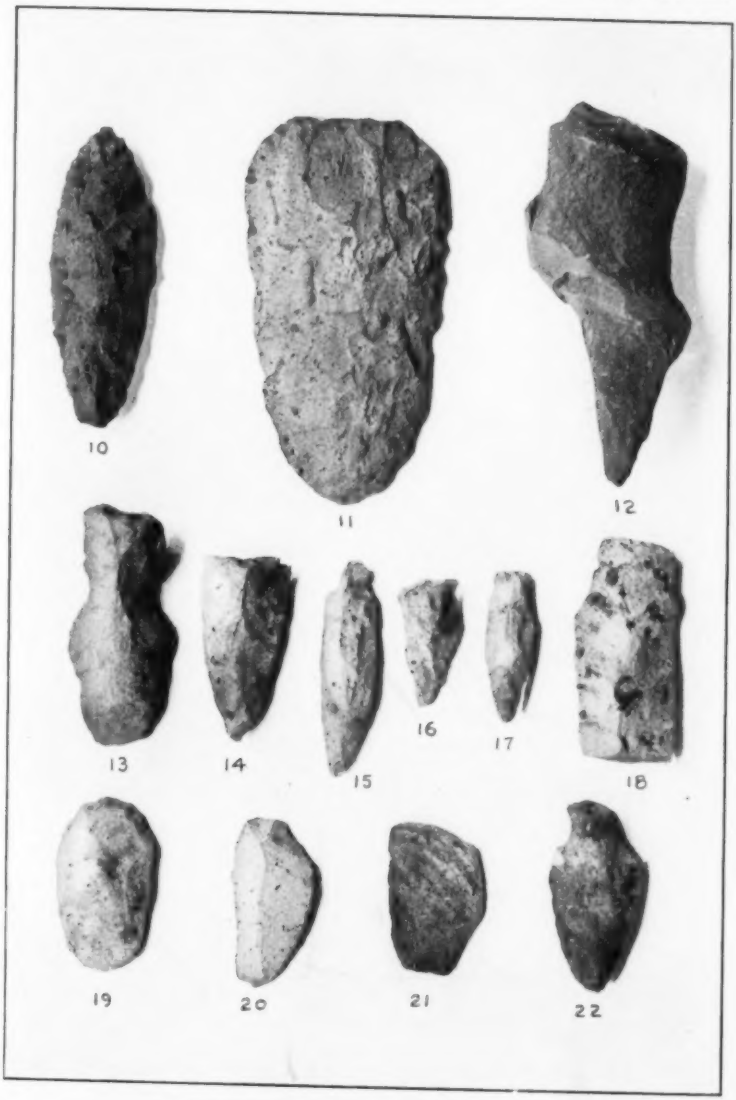
Of the objects found at Squaw point, that represented by figure 6 is most typical. The objects from this particular locality were, as a rule, somewhat water-worn.

Figure 9 illustrates one of ten hammer-stones, which range in shape from spheroidal to discoidal. The illustration shows one of the latter type. The texture of the material renders these implements admirably suited to the battering of other stones. They vary in their greater diameter from 5¼ in. to 1¾ in.

Figure 4 represents the "turtleback" type, of which sixty-eight specimens were collected, ranging in greater diameter from 4½ in. to 2½ in., and having an average thickness of 1½ in. Some of the specimens are flat at base, while others are convex on both sides. In the Peabody Museum at Cambridge, Mass., there are four specimens of this type, measuring ten inches or more in length, that were found in one of the workshops in the talus of the mountain.

Figure 2 shows a specimen that appears to be *sui generis*, having been originally flaked, or chipped into form, and subsequently hammered for hafting, as the two notches and the face of the illustration indicate. The part that may be designated the blade seems to have been intended for use as a hammer rather than for any other purpose. Its length is 5⅜ in., its width 3¾ in., and the thickness 1⅝ in. Two other objects, somewhat similar but without the grooves, were found. The specimen shown in figure 12 was found under a stone with that represented by figure 2, on a house site above high-water mark. Both appeared to have been hidden as if to be again used. Under the same stone was also a pile of small spalls, or chips, — refuse from implement-making. The object illustrated (fig. 12), which appears to be unlike any implement known elsewhere, is made from a schistose mineral, and is the only specimen that appears to have been entirely shaped by hammering. It fits the hand comfortably, and may have been employed as an awl for enlarging holes in leather. The object is 5¾ in. long, and 2¼ in. in maximum thickness.

Figure 5 illustrates an object of problematical use; it can scarcely be called either a turtleback or a core. It is flat at both bottom and top, is chipped around the sides, and appears to have been used possibly as an anvil, or a lap-stone, as it was found close to



RHYOLITE OBJECTS FROM MT KINEO, MAINE

a pile of chips, and has a slight roughening on the upper surface as though stone had been chipped on it; but this is mere surmise. It has a maximum diameter of 5½ in., and is 1¾ in. in thickness.

Figure 7 represents one of a hundred similar specimens, the largest averaging 4½ in. in length and 3½ in. in width; some are not more than ¼ in. thick. This type may be classed as knives, or flakes with cutting edges, and although most of them have been undoubtedly artificially worked, some show no evidence of artificial flaking or chipping.

Figure 8 exhibits a singular specimen, triangular in cross-section, in which a natural form has been helped out by delicate flaking along one of its three facets. This object is 4¼ in. long, and 1¾ in. in maximum width; the point is as sharp as a needle. This implement reminds one of certain bayonet-pointed objects of slate found at Ellsworth, Maine.

Figures 10, 13–18, and 22 are illustrative of the projectile points which range in length from 1 in. to 5½ in. They present no unusual features, but they exhibit the character of the Kineo rhyolite, which appears to lend itself to more varied artificial fracture than that of almost any of the great quarries of the continent.

Figure 19 illustrates one of twelve scrapers found, a single specimen of which is of quartz. They vary in length from 1½ in. to 3½ in., and in width from less than 1 in. to 1½ in.

Among the stones scattered on the beach, quartz is not uncommon, but it is usually in broken, angular pieces, and of a texture unsuited to artificial fracturing. On house sites there were found several small pebbles of white quartz, similar to the polishing and gaming pebbles of Indians of to-day.

The implements herein referred to vary in color from the natural dark green of the freshly fractured stone to chocolate color shading into light gray, light cream, or yellow. The weathering depending apparently on the period of the exposure, in broken objects, where both pieces were found, the fracture shows that the weathering had penetrated in certain cases to the depth of half an inch.

A number of specimens preserved exhibit the varying character of the rhyolite in its natural cleavage, which ranges from smooth flat plates to pieces having convex or concave blades, and others

with straight edges, turning, in certain instances, from straight to an angle of thirty degrees, all with sharp blades. Whether the remains found were the implements of a sedentary people is a question. The region of the lake must always have been a paradise for fisherman and hunter, as lake and brook trout are still to be found in abundance, in addition to moose, caribou, deer, bear, bobcats, beaver, and otter.

Figure 121 illustrates a natural concretion, totally unlike anything observed on the beach. The only indication of artificial work appears on the upper end of the specimen, where the top appears to have been artificially excavated to the depth of $\frac{1}{16}$ in., in which are cut or scratched a number of straight lines. This object belongs to a class that has been encountered by most archeologists throughout the country. They are still in use among the Pueblos, and have been found in pueblo ruins of the Southwest, in the mounds of the Mississippi drainage, and in shell-heaps of eastern United States. Such objects were sometimes the personal fetishes of their owners, and served either for protecting them from harm or for bringing good fortune in the hunt or in war. Such fetishes were sometimes painted to strengthen some fancied resemblance to the owner's tutelary, or were otherwise marked by adding a mouth, an eye, or other feature. Schoolcraft describes certain "image stones" which "the native tribes who occupy the borders of the great lakes are very ingenious in converting to the uses of superstition, such masses of loose rock or boulder stones as have been fretted by the

FIG. 121. — Natural concretion with artificial markings in depression at top.

action of water into shapes resembling the trunks of human bodies, or other organic forms. There appears, at all times, to have been a ready disposition to turn such masses of rude natural sculpture, so to call them, to an idolatrous use." Of these figures Schoolcraft illustrates five specimens.[1]

Lalemant, referring to Dreuillettes' conversion of the Abnaki on the Kennebec, in the Jesuit Relation of 1647 says that one of the evidences that the Father obtained was that the Indians "should throw away their manitou, or demons, or fantastic charms. There are few young men among the savages," he says, "who have not some stone, or other thing which they keep as a dependence upon the Demon, in order to be happy in the hunt, or in play, or in war. . . . Those who had some of these charms, or manitous, drew them from their pouches; some cast them away, others brought them to the Father."[2]

WASHINGTON, D. C.

[1] *The Indian in his Wigwam*, p. 290, 1848.

[2] *Jesuit Relations and Allied Documents*, vol. XXXI, pp. 183–95.

TOTEMISM IN CALIFORNIA[1]

By C. HART MERRIAM

That totemism exists among the Indians of California seems to have escaped the notice of ethnologists. This may be due to the less conspicuous part it plays in the lives of the people compared with its high development in some other regions, notably Alaska and British Columbia. Nevertheless totemism not only exists in California, but is rather widely prevalent; it is present in many tribes — tribes distributed among widely different stocks; and, when one comes to understand something of the inner life of the people, it is found to be as deeply rooted, and in some cases as important, as in other regions.

It is not my object to discuss the subject totemism, but to record the widespread prevalence among California Indians of certain totemic beliefs and practices which, apparently, have not been previously observed. And it is interesting to note that of the several degrees and phases of totemism, at least three occur in California, namely: (1) The non-hereditary *individual totem;* (2) the hereditary *patriarchal totem;* and (3) the hereditary *matriarchal clan totem.*

I am aware that some ethnologists would restrict the use of the term totemism to the class of cases ordinarily known as *clan totemism;* but clan totemism is so obviously only a higher development of *personal totemism* that such restriction would seem hardly to serve a useful purpose.

In California the totem is always an object in nature — usually an animal, but sometimes a tree or a rock.

Among the several tribes of Mewan stock totemism forms a fundamental part of the religion, and throughout life is a controlling

[1] Read before a joint meeting of the Anthropological Section of the American Association for the Advancement of Science, the American Anthropological Association, and the American Folk-Lore Society, in New York City, December 27, 1906; and briefly noticed in the *American Anthropologist*, vol. 9, p. 168, Jan.–Mar., 1907.

factor in the conduct of the people. The form it takes varies greatly. Thus among the Southern Mewuk (Mewwah) it governs marriage and the choice of partners in games, and also determines the placing and treatment of visitors; while among the Northern Mewuk, where its power over the individual is even more marked, no such social restrictions exist.

In the Middle and Southern Mewuk the totem is hereditary and passes from father to child; the mother's totem is not carried down. If the father is a Deer, all the children — boys and girls alike — are Deer.

In the Northern Mewuk on the other hand the totem is individual, not hereditary. The father may be a Bear, the son a Gray Tree-squirrel, the grandson a Lizard, the aunt a Yellowjacket Wasp. In reply to inquiries as to how one finds out what his totem is, I was told that a young person, on reaching the age of puberty, goes off alone in the forest and wanders for days without food — save such green stuff and roots as he may gather and eat raw. He wanders *hang'-e-lah* (like a lost man) for a period which may last for two weeks. After a time, when asleep, he sees the animal he came from; it or its spirit comes to him and brings him food. After this he goes home but says nothing about what has happened. If on the first or second night it again appears and brings him food, he lives, and throughout life it befriends him; but if it does not come to him and he eats cooked food, he dies.

In this tribe — the Northern Mewuk — the totem may be an animal, a tree, or a rock. The commonest animal totems are the Bear, Deer, Raccoon, Gray Tree-squirrel, Golden Eagle, Lizard,[1] and Yellowjacket Wasp. Certain animals are never totems. Conspicuous among these are the Coyote and Fox. The only tree totem is the Black Oak.

My list of Northern Mewuk totems is only fragmentary and does not include the Great Horned Owl; but a member of the tribe once told me a story which at least implies that this owl is one of them. He said: "One winter a few years ago a sick man near Oleta was on his way home when he fell and could not get up. He lay there

[1] The Northern Mewuk have two Lizard totems: *Pe-lă'-lit-te* the Little Lizard, and *Suk'-kă-de* the Black Lizard.

on the ground all night. It was a cold winter night and he would have frozen to death, but *Too-koo'-le* the big Owl saw him and came and lay down on his breast and spread his wings over him and stayed there all night, keeping the man's *wus'ke* (heart) warm and saving his life."

Among the Middle and Southern Mewuk the totem may be either an animal or a tree, but never a rock — in which latter respect they differ from the Northern Mewuk, many of whom came from rocks. If a tree, it must be either the Black Oak or the Sugar Pine, as these are the only trees from which people ever came. The most usual totems are: the Grizzly Bear (but no other bear), Coyote, Deer, Gray Tree-squirrel, Bat, a considerable number of birds, the small lizard called *Pe'-chik-kah*, the Frog, the water Salamander, the Salmon, and the Yellowjacket Wasp. These people say they never came from the Elk, Black Bear, Mountain Lion, Bobcat, Raccoon, Big Wolf, Fox, Badger, Otter, Shunk, Marten, Ringtail Civet (*Bassariscus*), Porcupine, Groundhog, Ground Squirrel, Chipmunk, Rabbits, Rats, Mice, Gopher, Mole, certain birds, Snakes, the larger Lizards, the Toad, Fish (except the Salmon), or insects (except the Yellowjacket Wasp).

Among the Middle and Southern Mewuk the people group themselves in two great classes or "sides" — the Land Side and the Water Side — designated respectively by the names of characteristic land and water animals. Thus among the Middle Mewuk, *Oó'-yah* the Deer stands for the people of the Land Side; *Ló'-tah* the Frog for those of the Water Side. Similarly, among the Southern Mewuk, *Ti'-es-moo* the California Bluejay stands for the Land Side, and *O-sä'-le* the Coyote for the Water Side.[1] Even to-day, in some parts of Southern Mewuk territory, the first question a strange Indian (speaking the same language) is asked, is, *Man-nan'-ne Ti'-es-moo, O-sä'-le?* (Who are you, Bluejay or Coyote?). His reply determines the place assigned him and his subsequent relations and treatment. In love affairs and marriage, and also in games,

[1] That the Coyote, a land animal, should have been chosen to represent the Water Side seems strange at first, but is understood when the *oot'ne* or mythology of the tribe is known, for in the beginning Coyote-man came out of, or from beyond, the sea. This aquatic assignment of Coyote does not affect his near relatives the Dog and Fox, both of whom are classed on the Land Side.

the partners must belong to opposite sides. The Northern Mewuk do not have this custom, but use the direct terms, *Kik'-kū-mud'-de*, water side, and *Wal'-le-mud'-de*, land side. The Middle and Southern Mewuk who came from trees (Black Oak and Sugar Pine) were classed naturally on the Land Side.

The three tribes of Mewan stock living north of San Francisco bay are ardent totemists, but the full details of their beliefs are not known. The *O-lā'-yo-me* of Coyote valley on Putah creek say that they came from the Bear, Deer, Coyote, Gray Tree-squirrel, Ground Squirrel, Owls and a few other birds, but not from the Raccoon, Fox, Duck Hawk, Crow, Bluejay, Meadowlark, or Woodpecker. Their totem is hereditary on the father's side, and appears to be called *O'-ke-ap'-po*.

The *Hoo'-koo-e'-ko* of the coast region immediately north of San Francisco bay, and the *Olamentko* of Bodega bay, say that every person was once a bird, and that they came from Owls, Eagles, Hawks, Quails, Ducks (the Mallard in particular), Bluejays, Woodpeckers, and some other kinds. But no *Hookooeko* or *Olamentko* ever came from any mammal. This is a highly important feature in which the two coast tribes agree among themselves and differ from the related *Olā'yome* of Coyote valley.

The tribes of Midoo stock also came from animals. The *No-tó-koi-yo*, or Northeastern Midoo, state that they came from various birds and mammals; and the *Pā'-we-nan*, or Southwestern Midoo, have the same belief. These people, the *Pā'-we-nan*, appear to call their totems *Kaht'-dik-kah*. They are the Deer, Antelope, Wolf, Coyote, Fox, Mountain Lion, Raccoon, Skunk, Beaver, Rabbits (three kinds — Jackrabbits, Cottontails, and Brush Rabbits), Ground Squirrel, Gopher, White-footed Mouse, Bald Eagle, the large buzzard hawks of the genus *Buteo*, the Duck Hawk, Condor, Turkey Buzzard, Great Horned Owl, Raven, Crow, Valley Quail, California Bluejay, Meadowlark, Flicker, Blackbird, Pelican, Cormorant, White Goose, Swan, Great Blue Heron, Kildee, Lizard, and Salmon. The *Pā'-we-nan* did not come from Elk, Bears, Wild Cat, Badger, Otter (there is doubt about the Otter), Gray Tree-squirrel, Wood Rat, Ducks, Divers (Grebes), Gulls, Mudhen, Sandhill Crane, Gray Goose, Canada Goose, Barn Owl, Ground or Burrowing Owl,

Pigeon, Dove, Roadrunner, Kingfisher, Magpie, California Woodpecker, Robin, Swallow, Hummingbird, Turtle, Frog, Snakes, Sturgeon, or Sucker; neither did any of them come from insects or trees.

It is interesting to note that with the *Pä'-we-nan*, as with the Southern Mewuk already mentioned, the totem is hereditary and descends from father to children of both sexes.

Passing south to the Yokut stock of the Southern Sierra foot-hills, totemism is present in some and probably all of the tribes. In the *Kosh-sho'-o* tribe of Table mountain, on the south side of the San Joaquin river, it is more highly developed than noted elsewhere. An old woman of this tribe told me that *Yi'-yil* the Falcon was her family or clan totem — the totem of her mother and her mother's mother and so on back, for in this tribe mother right prevails and the line of descent carries the mother's totem instead of the father's. This woman showed me two baskets, made by her mother and grandmother, on which the clan totem, *Yi'-yil*, is represented by a symbol consisting of two parallel oblique bars, which stand for the two dark bars on the side of the Falcon's head (fig. 122). In the oldest basket, a small low bowl, slightly choke-mouthed, this symbol is the dominant design and is repeated in two circles around the circumference. The basket was by far the most precious one remaining in the tribe, and when brought from its hiding place was full of large stone beads and long cylinders of the old-time shell wampum. The owner told me that in making ready for dances and other ceremonials the women of her clan used to paint the *Yi'-yil* bars on their cheeks.

FIG. 122. — Kosh-sho'-o basket with *Yi'-yil* (Falcon) design.

WASHINGTON, D. C.

BONTOC IGOROT GAMES

By S. C. SIMMS

The games and pastimes of Bontoc Igorot children are very few. The most peculiar and the least like any other ever seen among primitive peoples by the writer, is a more or less acrobatic game which is played usually by groups of three little girls about twelve years of age, or older. Frequently when playing they are naked; at other times they wear only a very short woven cotton skirt, open at one side from waist to hem, and fastened about the waist by means of a belt or the ends of the skirt tucked in over each other.

Just after the rainy season, when the crop of pigweed has attained a harvestable growth, little girls are sent to gather this weed for food for the highly esteemed pig. It is after each girl has gathered a large tray of the weed, seemingly too large and heavy for their slender figures to support, and while returning to their homes, that their desire to play this game seems keener than at any other time — why, I was unable to learn. It may be said in connection with this game that the pueblo of Bontoc, unlike any other Igorot village of Lepanto-Bontoc province, has grassy streets shaded by large trees.

Placing their burdens of pigweed upon a grassy plot, three of the girls arrange themselves in a triangular grouping, back to back and about a foot or so apart. At an uttered signal from one of the players, each bends forward and rests her head and hands upon the ground, and with a simultaneous springy shove of their feet at the beginning, and often an indiscriminate scramble of legs and feet, the attempt is made to assume a vertical position of the body supported by the head and hands upon the ground, with legs inclining forward to the center and feet touching and assisting in supporting and balancing each other (see fig. 123). When they have steadied themselves in this position after many unsuccessful attempts, amid much hearty laughter among their companions and themselves, one

of the three begins to sing a very pretty song, in which the other two join.

During the singing, and at a particular word or sound of a note, the right leg of each girl is withdrawn from the central grouping and held in a widely separated, almost horizontal, position, while the singing continues until another signal is given, when each

FIG. 123. — Game of Bontoc Igorot girls.

right foot is replaced in a concerted move to its former position in the center. The left leg is next withdrawn, and the same position assumed as when the right foot was withdrawn.

There appeared to be several verses to the song, or repetitions of a verse, for the right and left feet were alternately withdrawn several times during the singing.

When skirts are worn, efforts are made by the girls to hold them tightly between the legs. Should they become freed or disarranged, the game is not stopped, but goes merrily and innocently on, until the participants are compelled to desist through fatigue or the remembrance of unfinished tasks.

At Sagada, in Lepanto-Bontoc province, Luzon island, I witnessed a game consisting of a combat with missiles of mud and earth, played by about thirty young men and boys from Sagada and a like number from the nearby town of Balugan.

The game was performed on a flat harvested rice field, soft with mud and surrounded by high hills forming a natural amphitheater, from which followers of the contending sides cheered or jeered as their champions advanced against their adversaries or were repelled by them. Great clods of earth as well as balls of soft clay were dexterously thrown and with astonishing accuracy.

Many of the contestants, mostly the men, did not condescend to use any means of protection, each trusting solely to his ability to dodge the missiles. Those who did endeavor to protect themselves were principally the younger boys, who used shields about thirty inches long and fifteen inches wide, roughly made for the occasion of vertical stalks of *runo* grass with horizontal bindings of rattan. Considerable skill was displayed in their use.

Frequently when a side was being routed a number of women spectators would urge their male companions to join the losing forces. The additional recruits would be noisily welcomed and jeered by the adherents of the contending sides.

After each side had been routed a number of times, the fight came to an end by the Sagada men chasing the Balugan men to their town amid a shower of missiles and a chorus of derisive yells.

Another combative game observed at Sagada was a kicking fight, played between individuals of two contending sides composed of boys about seventeen years of age.

In kicking, the body is bent sideways at the waist, so that at times the head is lower than the waist, and the blow of the foot is dealt with considerable agility and force by a sudden upward and slightly backward kick, which frequently finds the body of the adversary. This mode of kicking is adapted in order that the striking may be done with the flat hard sole of the foot, rather than with the unprotected and almost universally spreading toes.

After a brief spell of playing, the kicking became seemingly indiscriminate, for at times two boys of one side made a combined attack on one of the opposing side, who in turn would be reënforced, and soon the game developed into a confusion of kicking legs.

A number of young boys at Sagada were seen spinning tops made of hard wood with flat heads, about 5 cm. in diameter, and an irregular semi-globular body with sharpened spinning end. Short thin spinning strings of twisted fiber were used, and the tops were spun with a quick underhand draw near the ground.

While the tops were spinning, usually two at a time, each of the two players placed his open hand palmward to his own top and gave it a slight touch for the purpose of causing the tops to collide, in order to knock the opponent's top over.

A unique game was observed near Danu, while the writer was journeying from Balbalassan to Bontoc, several of the *cargadores* from Banged being the competitors.

A narrow platform-like structure, consisting of six upright sticks, was constructed. The upper end of each was forked, while the lower end was sharpened and driven in the ground. Of the six supports, two were at each end and one on each side about midway between the end supports. A number of sticks cut from branches of trees, of sufficient strength for a man to sit upon, were laid longitudinally on the crotches of the supports. A challenge was issued, and accepted. One of the players (there were but two at a time) seated himself sidewise on the platform, with his left leg slightly bent and the foot placed firmly on the ground. The right leg was drawn up and the foot placed against the crotch of one of the end supports. The left hand passed under the upper part of the right leg and pulled the fleshy part of the thigh toward the left leg, thereby reducing the striking surface and at the same time making it more firm. The position thus assumed gave the striking contestant an unobstructed space upon the seated man's leg to inflict the blows with his open hand.

The striker advanced with his striking hand outstretched, as if to measure the distance suitable for delivering the most effective blow. After one or more practised swings of the arm, as though to obtain momentum or force, he suddenly whirled and brought the palm of his hand upon the unflinching target with a resounding smack. As soon as the blow had been delivered, examinations were made by friends of each of the players to determine the result. The character of the visible evidence, if any, of the hand upon the leg, and

the manner with which the blow was received, governed the decision of the judges as to the superiority of the striker or the stricken. Several pairs of men participated in this novel game.

Simple games, such as blowing out a lighted candle, when blindfolded, were also played by several of the *cargadores* while camping on the trail.

In another, a stalk of runo grass between four and five feet long was stuck upright in the ground. The upper end was slightly slit, and into it was placed a pebble about the size of a small hickory-nut. The object was to fillip the pebble from the stalk. A certain number of trials for each player, as well as a common starting point, was agreed upon. With one hand held tightly over the eyes, the other outstretched with the index or second finger in readiness to fillip the pebble, each individual advanced continuously in the direction of the stalk. Of ten or twelve players, only one succeeded in accomplishing the feat, which in a measure illustrates the fairness of the participants in not peeping.

Another game of a juvenile character was played among the *cargadores* while camping. About twenty sticks, seven or eight inches in length, were laid upon the ground in a row side by side and several inches apart. The player assumed a low squatting position at the extreme right end of the row of sticks, and picking up the end stick placed it at the extreme left end of the row, going from one end to the other by hopping sidewise with both feet, and not pausing while placing the sticks at the left end. He then hopped back to the right end of the row, picked up the end stick, and hopped again to the left end, where, as before, he deposited the stick.

The act of picking up the stick, hopping away with it, placing it upon the ground, and returning to the right end was repeated until each stick had been removed from its original position and placed at the extreme left end of the row, or until the player succumbed from fatigue. That a considerable amount of strength in the legs was required to play this game through was clearly shown by the failure of several muscularly built men to complete it.

FIELD MUSEUM OF NATURAL HISTORY,
CHICAGO.

THE ACCOUNT OF LAMHATTY

By DAVID I. BUSHNELL, Jr

An old manuscript of unusual interest, relating to the Creek Indians in 1706 and 1707, is preserved by the Virginia Historical Society at Richmond. It forms No. 13, vol. IV, of the Ludwell Papers, and is now printed for the first time.

The manuscript is an account of an Indian from the town of Towasa who was taken captive by a band of "Tusckaroras" and carried northward through many Creek towns; later he was sold to the Souanoukas [Shawnees], whose village was across the mountains toward the east. Still later he accompanied a party of Shawnee on a hunting trip northward along the foot of the mountains. They evidently entered the valleys of the Blue Ridge and the Alleghanies in Virginia, beyond the headwaters of the streams flowing into the Atlantic. Soon he escaped from the Shawnee and made his way down the Mattapony to the English settlements.

The account was either written or dictated by Robert Beverley, the historian, two years after the first edition of his *History of Virginia* was published. It is written on a single sheet of paper, and on the reverse is a map of the country through which Lamhatty passed, his route being shown by a dotted line. The map is reproduced in facsimile, though slightly reduced, in plate XXXV.

The manuscript reads as follows:

"Mr Robert Beverleys Acco: of Lamhatty

"Lamhatty an Indian of Towassa of 26 years of age comeing naked & unarmed into the upper inhabitants on the north side of Mattapany in very bad weather in ye X: mass hollidays anno 1707 gives this acco:

"The foregoeing year yr Tusckaroras made war on ye Towasas & destroyed 3 of theyr nations (the whole consisting of ten) haveing disposed of theyr prisoners they returned again & in ye Spring of ye year 1707 they swept away 4 nations more, the other 2 fled, not to be heard of 'twas at this second comeing that they took Lamhatty & in 6 weeks time they caryed him to Apeikah from thence in a week more to Jäbon,

from thence in 5 days to Tellapousa (where they use canoes) where they made him worke in y^e^ ground between 3 & 4 months. Then they carryed him by easy Journeys in 6 weeks time to the Opponys, from thence they were a month crossing y^e^ mountains to Souanouka's where they sold him.

"A party of y^e^ Souanouka's comeing northward under the foot of y^e^ mountains took him with them, there were of y^e^ Souanoukas, 6 men 2 women & 3 children, he continewed with them about 6 weeks, & they pitched thier Camp on y^e^ branches of Rapahan: River where they pierce y^e^ mountains, then he ran away from them keeping his course E b S & E S E. Crossing 3 branches of Rapahan: River & thrice crossing Mattapany till he fell in upon Andrew Clarks house which he went up to & surendered himself to y^e^ people they being frightned Seized upon him violently & tyed him tho' he made no manner of Resistance but shed tears & shewed them how his hands were galled and swelled by being tyed before; where upon they used him gentler & tyed y^e^ string onely by one arme till they brought him before L^t^ Coll^o^ Walker of King & Queen County where is at liberty & stays verry contentedly but noe body can yet be found that understands his language.

"Postscript [torn] after some of his Country folks were found servants [torn] he was sometimes ill used by Walker, became very melancholly after fasting & crying several days together sometimes useing little Conjuration & when warme weather came he went away & was never more heard of."

Many of the towns through which the path led have been identified; but others cannot be traced.[1]

The towns, beginning with Towasa, are:

1. *Tówasa.* The narrators of the De Soto expedition relate that on the 12th of September, 1540, they reached the town of Toasi, at some point eastward of where it was situated in 1707. "Too-wos-sau, is three miles below E-cun-cha-te, on the same side of the river [A-la-ba-ma] a small village on a high bluff." — Hawkins, p. 36.

2. *Socsoóky.* Not identified.

3. *Apéicah.* "Au-be-coo-che . . . This town is one of the oldest in the nation; and sometimes, among the oldest chiefs, it

[1] I desire to express my indebtedness to Mr James Mooney of the Bureau of American Ethnology, for assistance in the identification of the various names. The works quoted are: A. S. Gatschet, *A Migration Legend of the Creek Indians*, vol. I, Phila., 1884; vol. II, St. Louis, 1888. Benjamin Hawkins, *The Creek Confederacy*, in Coll. Georgia Hist. Soc., vol. III, pt. 1, Savannah, 1848.

gives name to the nation, Au-be-cuh." — Hawkins, pp. 41–42. "Ábi'hka . . . one of the oldest among the Upper Creek towns. . . . It certainly lay somewhere near the Upper Coosa river." — Gatschet, vol. 1, p. 124.

4. *Jábon.* Not identified.

5. *Alabáchehati.* Not identified.

6. *Tellapoúsa.* Tallapoosa, a term usually applied to the Upper Creeks, although there may have been a town of that name.

7. *Tockhoúsa.* Not identified.

8. *Cheeawóole.* Probably *Ho-ith-le Waule*, which stood on the right bank of the Tallapoosa. — Hawkins, p. 32.

9. *Cawéta.* "Kawita, a Lower Creek town on the high western bank of Chatahochi river, three miles below its falls. The fishery in the western channel of the river, below the falls, belonged to Kawita, that in the eastern channel to Kasi'hta." — Gatschet, vol. 1, p. 134. "*Cow-e-tugh*, on the right bank of Chat-to-ho-che, three miles below the falls, on a flat extending back one mile."— Hawkins, p. 52.

10. *Awhissie.* Not identified.

11. *Oūquáncy.* Possibly the Okoni, who appear to have moved from place to place and to have lived, at an early time, on Oconee river, in the eastern part of Georgia.

12. *Oukfusky.* "Okfuski (better Akfaski), an Upper Creek town, erected on both sides of Tallapoosa river, about thirty-five miles above Tukabatchi. . . . In 1799 Okfuski (one hundred and eighty warriors) *with* its seven branch villages on Tallapoosa river (two hundred and seventy warriors) was considered the largest community of the confederacy." — Gatschet, vol. 1, p. 139.

13. *Sowanoúka.* Referring to the Shawnee. (The Creek form is *Savanogi*, the Cherokee *Sawanuki.*) The village is shown on the map east of the mountains and evidently represents a Shawnee settlement on upper Savannah river.

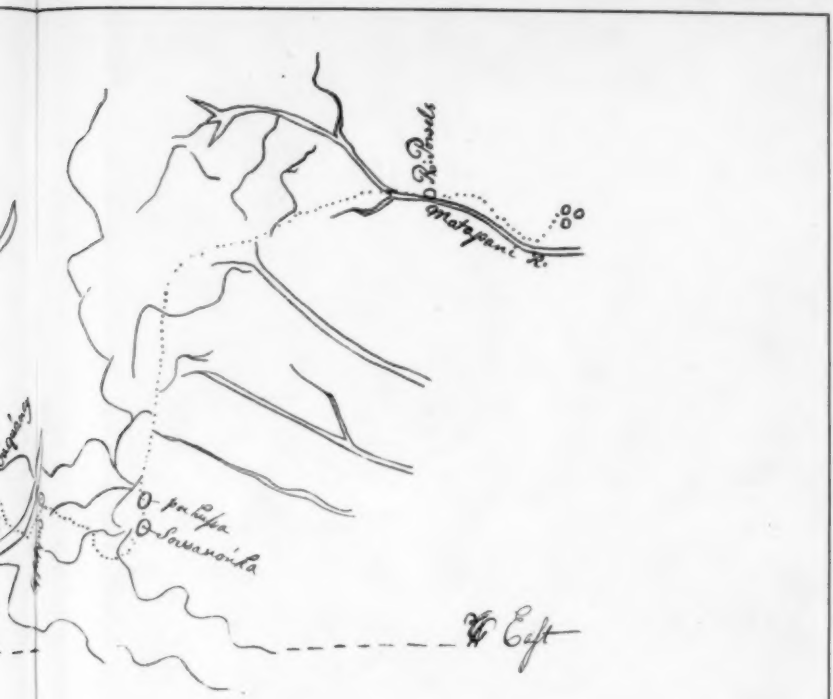
14. *Pochússa.* Not identified.

The towns through which Lamhatty passed, were, according to the text:

1. *Towassa.* (On map Towásа.)

2. *Apeikah.* (On map Apéicah.)

MAP SHOWING THE ROUTE OF LAMHATTY FROM TOWASA IN 1707. [TORN] the O



1707. From the Original Manuscript in possession of the Virginia Historical Society.)

3. *Jābon.* (On map Jábon.)

4. *Tellapoúsa.* (Same on map.)

5. *Opponys.* (Possibly the Oūquáney on the map. They may also have been the Saponi of North Carolina.)

6. *Souanouka's.* (On map Sowanoúka.)

In addition to the towns already mentioned as having been on the route followed by Lamhatty, there are eight others bearing names. As all are shown to have been situated in the southern part of the country, they, together with Towasa and Socsoóky, may have constituted the ten nations, or rather bands, of the Towasa which are referred to in the text. The names of the eight towns are:

1. *Poúhka.* Hawkins (p. 36), refers to a small town called *Pau-woc-te* near the later site of Towasa. This may be the same as Poúhka, and if so the two were probably removed at the same time, as they are shown close together on the map in 1707.

2. *Tomoóka.* This may refer to a settlement of the Timucua, originally resident in northern Florida, known to the English as Tomoco.

3. *Sowóolla.* May possibly be Saw-woo-ge-lo. (Hawkins, p. 65.)

4. *Aulédly.* Not identified.

5. *Ephippick.* Not identified.

6. *Ogolaúghoos.* Not identified.

7. *Choctóuh.* Possibly the village of the Chato or Chatot tribe, afterward settled near Mobile.

8. *Sonepáh.* Not identified.

Several other towns are indicated on the map, but no names are attached to them.

Ouquódky is given as the name of the Gulf of Mexico.

Names are given various streams as:

1. . . . *bly Netúckqua.* Evidently the Appalachicola.

2. *Chauctoúbah.* The position of this river on the map corresponds with that of the Flint, which, together with the Chattahoochee, forms the Appalachicola.

3. *Wichise.* If the hypothesis be correct regarding the two preceding streams, this must necessarily refer to the Chattahoochee.

The name is probably identical with that of Ochesi, a Lower Creek or Seminole town of the lower Chattahoochee region.

4. *Sowoólla·oúbah.* Not identified.

5. *Sayénte Alatám oúbah.* Not identified.

6. *Alatám.* This may be Duck river, on later maps.

7. *Matapani.* The Mattapony, which, with the Pamunkey, forms the York river, in Virginia.

8. *Rapahan:.* Probably the Rappahannock.

The names are in the Hitchiti dialect, the suffix *oubah* evidently meaning river, or water.

The principal value of the manuscript, aside from its general interest, is the reference to the dissolution of the Towasa tribe, which in Hawkins' time (*ca.* 1799) we find incorporated with the Creeks. Also it throws new light on the size of that nation. It is said that during the year 1705 the Towasa moved to Mobile, to be near the French:

"At the beginning of this year 1705 a savage nation called the Touachas came to M. Bienville at Mobile to beg of him a place in which to establish themselves; he marked out for them a place at a distance of one league and a half below the fort where they remained as long as we were established at Mobile."[1]

The slight variance in dates does not detract from the value of the manuscript: it must be remembered that it was written by an Englishman, as told by an Indian, far from the places mentioned.

II. Caŵeta in 1740

As Caŵeta was mentioned as being on the route followed by Lamhatty in 1707, the following brief account of a visit to that town thirty-three years later is of special interest. The description forms part of an unpublished manuscript in the British Museum (Stowe, 792), which is a journal kept by a member of General Oglethorpe's expedition to the Creek towns in 1740. Only the portion relating to the Indians is quoted:

"We camped at Ocmulgas River where are three mounts raised by the Indians over three of their Great Kings who were killed in the wars . . .

[1] Margry, *Découvertes*, Paris, 1883, pt. v, p. 457.

"Aug 8th We encamped about two miles from the Indian town. The Indians sent Boys and Girls out of their Town with Fowls, Venison, Pompions, Potatoes Water Melons & Sundry other things.

"About ten of the Clock we set forward for the Indian Town & were met by the Indian King and some of their Cheifs. The King had English Colours in his hand. We Saluted them & they returned our Salute and then shaking hands with the General & Company. The King very gracefully taking him by the Arm led him towards the town & when we came there they brought us to Logs which they had placed for that purpose covered with Bears Skins and desired us to sit down which when we had done The head Warriors of the Indians brought us black Drink in Conk shells which they presented to us and as we were drinking they kept Hooping and Hallowing as a Token of gladness in seeing us. This Drink is made of a leaf called by the English *Casena* (and much resembles Bohea Tea)[1] It is very plenty in his Country, afterwards we went to the Kings House or rather Hut where We Dined. at night we went to the Square to see the Indians dance.

"They dance round a large Fire by the beating of a small Drum and Six men singing, their Dress is very wild & frightful, their faces painted with several sorts of colours, their hair cut short except three locks one of w^{ch} hangs over their Forehead like a horses fore top. They paint the short Hair and stick it full of Feathers. They have Balls [? bells] and rattles about their Waist and several things in their hands.

"Their dancing is of divers Gestures and Turnings of the Bodies in a great many frightful Postures.

"The women are mostly naked to the waist wearing only one short Peticoat w^{ch} reaches to the Calves of their Legs. Their Houses or Hutts are built with Stakes and Plaistered wth clay Mixed with Moss which makes them very warm and Tite. They dress their Meat in Large pans made of Earth and not much unlike our Beehives in England.[2] They do not make use of Mills to grind their corn in but in lieu thereof use a Mortar made out of the Stock of a Tree which they cut and burn hollow and

[1] Casena, or Black drink, was prepared by many Southern tribes from the leaves of of *Ilex cassine*. Conch shells, large univalves, were used as drinking cups. Mr Clarence B. Moore found remains of such cups in mounds in Alabama (*Moundville Revisited*, 1907, p. 395). Many writers refer to the use of shells and the drink, and one of the best accounts is in Haywood's *Natural and Aboriginal History of Tennessee*, Nashville, 1823, p. 156.

[2] Mr Holmes has illustrated various examples of large earthen vessels, from the southern Appalachian area, with rounded or pointed bottoms. These, if inverted, would closely resemble the old style conical beehives even now used in rural England.

then Pound their Corn therein and when its pounded sufficiently they separate the husks from the meal by Sifting thro' a Sieve made of Reed or Cane . . .

"Aug the 12th We set out from this Town which belonged to the *Couettan's* [*Cow-e-tuh.*— Hawkins, p. 52] to go to a Town of the *Causettans* [*Cus-se-tuh.* — Hawkins, p. 57]."

WASHINGTON, D. C.

SOME SENECA CORN-FOODS AND THEIR PREPARATION

By M. R. HARRINGTON

The object in preparing this paper is to set forth the principal native methods of corn preparation still in use among the Seneca Indians, as told me by the people themselves during my various sojourns among them on their reservations in western New York, without any attempt to treat the subject from the historical standpoint or to make a compilation from various authors.

Our earliest evidence of the use of corn among the Iroquois, of whom the Seneca form a part, is found on their ancient village sites, occupied before the white man came; and consists of abundant charred corn, with occasional cobs, husks, and stalks, found in ash-pits and other places favorable to their preservation. Then we have the historical accounts from the early missionaries, traders, and soldiers who passed through the Iroquois territory; and finally the work of more modern students, such as Morgan, writing in 1850, who briefly describes or alludes to several recipes which differ little if at all from those in use to-day.[1] Taking into consideration the nature of the recipes given in this paper, the conservative habits of the Indians, and the facts alluded to above, it is probable that many of them may reach back into prehistoric times.

Several distinct varieties of corn (maize) are commonly used by the Seneca, and I have found at least nine kinds of beans, all claimed by the Indians to be of native origin. Their great staple is *onẽñoñ'gän'*,[2] or 'white corn,' sometimes called Tuscarora or "squaw" corn. The ear is often of good size; the grains white, smooth, of dull luster, and rather soft; the taste delicious when eaten green on the cob, cooked as hulled corn, or prepared in the

[1] *Regents' Report on New York State Cabinet of Natural History*, 1850, pp. 73–75.

[2] In transcribing Seneca words I have endeavored to use the Iroquois alphabet published in J. N. B. Hewitt's Iroquoian Cosmology, *Twenty-first Ann. Rep. Bur. Am. Ethnology*, pp. 139–140.

numerous other ways known to Seneca cooking. Similar, but red in color, is *gwẽⁿ'dä'*, or *wẽⁿ'dä'*, generally used for the same purposes; while another form ripens earlier and bears shorter ears than either the white or red varieties. On account of its frequent dark, almost black, color this is called *onẽñ'oñdjï'* ('black corn'). In his article previously referred to Morgan writes of red corn as being used especially for parching in preference to the other soft varieties; but of this I heard nothing among the present Indians.

The fourth variety, *hé'gowa*, or flint corn, while very different from the preceding, is much esteemed by the Indians, who use it for making hominy. It is white or variegated in color, with very hard lustrous grains, while the ears are inclined to be dwarfish. As in the other varieties of corn it is braided into strings by means of the husks shortly after harvesting, and in this form hangs picturesquely from the owner's roof-beams until used. Among the Oneida the husked ears are sometimes kept in a tall egg-shaped storage basket. At the time of some of the more important Iroquois ceremonies one may sometimes see a string of flint corn hung as an offering outside the "long-house" where the dances take place.

The nine or more varieties of beans vary in size from that of a small pea to a large lima bean; in shape some are globular, some flat, some long and cylindrical, some ordinary bean-shape; while in color some are solid blue, others brown or yellow; some are blotched, and others are striped or speckled with reddish or bluish tints. Each variety has its own name, and some are considered especially valuable for certain purposes. One rarely sees beans worked alone; they are usually mixed with corn foods, which fact leads me to mention them here. Fresh wild strawberries, or dried blackberries, elderberries, or huckleberries are often similarly employed to give zest and flavor to hominy or to corn bread.

As one walks about near the "long-house" on any of the reservations, in the vicinity of which the more conservative people like to make their homes, a monotonous hollow thumping is frequently heard — the sound of the Indian grist mill, the great wooden mortar which is one of the most important utensils of every "pagan" family and is frequently found even in the more progres-

sive households. It is a section of a tree trunk of some tough wood and stands about two feet high. In one end a deep symmetrical cavity has been excavated with the aid of fire, and in this the women pound their corn by means of massive four-foot wooden pestles (*hę'tgēn'khā'*), preferably of maple. When not in use the *ga'nīga''ta'*, as the Indians call the mortar, stands near its owner's door, inverted to keep out the rain and dust. Both mortar and pestle are shown in use in figures 125, 130.

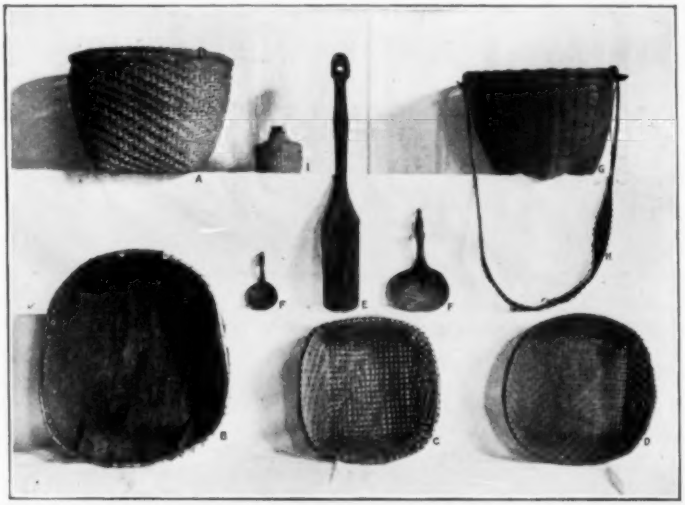


FIG. 123. — Seneca utensils for preparing corn. (A, Hulling basket. B, Elm-bark tray. C, Hominy sieve. D, Meal sieve. E, Stirring paddle. F, F, Ladles. G, Harvest basket. H, Burden strap. I, Salt basket.) Peabody Museum collection.

Another important utensil for corn preparation is the hulling basket, *ɣegai'doā'thā'*, a somewhat cylindrical affair of narrow thick splints well put together, with the bottom of openwork too small to permit a grain of corn to pass through (fig. 123, A). The twilled weave of the sides is not only ornamental but forms a corrugated surface which helps to remove the hulls from the grain in the process to be described later. Figures 128–131 also show the hulling basket.

Two gaps on opposite sides just below the rim usually serve for handles; but at Tonawanda a regular wooden basket handle is often put in — apparently a modern innovation. A hulling bag of archaic form, used in a similar manner, still survives among the Mohawk of the St Regis and Caughnawaga bands. It is made of three sets of basswood bark strips, woven together so as to produce hexagonal openings like those in the seat of a cane-bottom chair, but too small for corn to pass through. The rim of this bag is either a thick hoop of bark fibers firmly bound together, or a hoop of splints.

Of construction similar to the splint hulling basket, but with low sides, is the hominy sieve basket (fig. 123, c), *onĕ'yūstowánēs*, the bottom mesh of which will permit only cracked corn of a certain size to pass through. At Allegheny reservation this is sometimes

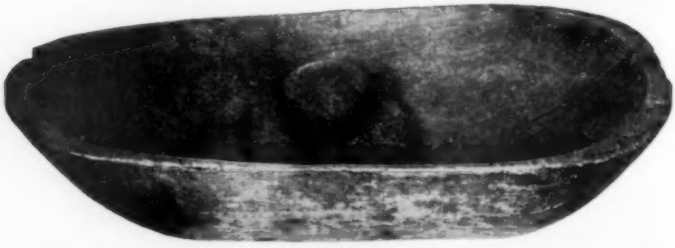


FIG. 124. — Stone corn-crusher with wooden bowl; Oneida. (Collection of E. T. Tefft.)

made in hexagonal form with a different weave, resembling, although splints are used, that of the Mohawk bark hulling bag just described, which is itself sometimes used as a hominy sieve. Another sieve (fig. 123, D), called *nyo^{n}nyo$^{n'}$sthasā'*, which has now almost universally given place to the ordinary wire article, was made like the first hominy sieve mentioned, only very fine, and was used to sift the corn flour when taken from the mortar, as shown in figure 131. Both sieves may be seen in figures 129 and 130, while in figure 125 the modern wire sieve is shown on the heap of flour in the wooden bowl to the left.

A flat stone slab and a rounded cobble are sometimes used as mortar and pounder for crushing green corn, as will be described later. Probably the shallow stone mortars and cobblestone mul-

lers frequently found on ancient sites sometimes served the same purpose. When in use these stones were placed in the middle of a wooden or bark bowl. In the collection of E. T. Tefft, Esq., of New York City, is a complete set of this kind (fig. 124), comprising bowl, mortar, and muller, collected by the writer from the Oneida Indians, near Oneida, New York. The bowl is of the oval wooden variety, the mortar a rectangular slab measuring about 6 by 4½ inches, and 1¾ inches in thickness, while the muller is circular, about 4 inches

FIG. 125. — Indian women pounding corn. (Drawn by Jesse Cornplanter.)

in diameter, and resembles those commonly found on Iroquois sites. This has been carefully worked into shape. Both slab and muller show indications of long use. The bark and wooden trays, both called *gä'oñ'wä'* in Seneca, were also used for mixing and serving corn bread. The bark tray or bowl (fig. 123, B), now becoming rare, is made of a piece of elm-bark neatly folded at the ends to make a shallow bowl, sometimes round, sometimes long, held firm and rigid

by sewing to a double hoop at the rim. The wooden *ga'oñ'wă'*, rarer still, is generally oval in shape and usually carved from "cucumber" wood. One of the former may be seenon the mortar in figure 131, while the wooden variety is represented on the stand to the left of figure 125.

Another implement used in the preparation of green corn was the scraper (*yega'so"'gäyă"'thă'*), made from one of the rami of a deer's lower jaw by simply removing the projecting processes back of the teeth (fig. 126). This was for scraping the corn from the

FIG. 126.—Scraper for green corn; Cayuga.

cob. It is frequently found in ancient Iroquois refuse deposits. Mr A. C. Parker, the State Archeologist of New York, who was the first to bring this implement to the writer's attention, says that corn prepared with its aid is called by a name that signifies "already chewed."

Among the other accessories of corn preparation may be mentioned the *gatgŭn'iŭshă'*, or paddle (fig. 123, E), often used to move the loaves of corn bread when boiling and for stirring corn soup. Plain specimens are shown in figures 127 and 128, but the article is frequently elaborately carved. Broad wooden ladles (fig. 123, F) called *ado'gwashă'*, some very large, some small, with short handles often surmounted by bird or other animal carvings, are used, the former for dishing, the latter for eating some corn foods; and there are still extant a few bark spoons and scoops, and small dishes of elm-bark or wood that doubtless served similar purposes. A bottle-shaped basket called *yedjŭkhe'dă"'kwă'* (fig. 123, I), made of corn-husks by the twining process and furnished with a corn-cob stopper, was used for holding salt in former days, but now has passed nearly out of use. Small wooden salt bowls are sometimes seen.

Corn is still planted from a little basket called *yŭndăshinun'dă-*

khwā', slung from the shoulder or tied around the waist by a strip of cloth; and is often harvested in a larger "pack-basket" (fig. 123, G; also shown on the bench in fig. 127), carried by means of a burden

FIG. 127. — Preparing for the Green Corn dance. (Drawn by Jesse Cornplanter.)

strap, *gus'ha'* (fig. 123, H), made of slippery-elm bark cord by twining, and passed across the chest, forehead, or shoulder of the harvester. This basket, called *yūntge'dāstha'*, is usually very well made, with graceful curves, and, especially in the older specimens, with very narrow cross splints on the sides. The long tapering ends of the burden strap are tied through two holes placed near together just below the rim of the basket, generally (at Tonawanda) by means of a special variety of bow-knot.

In a Seneca corn series furnished to the American Museum of Natural History I included a square, low-sided basket tray, made of very broad splints, and used to hold berries and green corn set out to dry in the sun.

All boiling of corn foods is now done in iron kettles (figs. 127, 128) or even tin wash-boilers when it is handiest to use a stove and

FIG. 128.—Seneca woman boiling corn, showing use of paddle, crane, and wooden pot-hook.

there are many to provide for; but in former days the pot of baked clay prevailed, as may be seen from the thousands of pottery fragments and occasional perfect specimens found on the ancient village sites. Another modern innovation is the substitution of pork for venison and bear meat, and of common for maple sugar, as ingredients for corn foods.

The most popular Indian dish among the Seneca to-day is undoubtedly *o"no'kwă'*, or hulled-corn soup. Seldom do the Indians, sagan or Christian, meet for any function, be it a session of the pecret medicine society or a church social, a war-dance or a Sunday afternoon gathering, without a great kettle of *o"no'kwă'*, hot and savory, to regale the crowd. Everyone comes provided with a pail or pitcher to "old style" religious dances and ceremonies, knowing that when all is over the pails will be ranged around the great kettle and will be filled, a ladleful at a time, each in turn around the circle until the *o"no'kwă'* is exhausted. A stranger boarding with an

Indian family often gets his first notice of a ceremony the night before from the *o"no'kwa'* served at breakfast. The recipes for making this dish vary slightly; but the following, collected at Tonawanda from Mrs Peter Sundown (*Gēhi'dĕ'*), will serve as a model.

A crane is first put up, either three poles leaned together in classical Gypsy style, as shown in figure 128, or more frequently two uprights and a cross-piece arranged as in figure 127. From this a large iron kettle, previously thoroughly scoured, is hung by a chain or by a pot-hook made by twisting the small end of a water-beech sapling into a withe to go over the crane, while the other end, with its projecting stumps of branches, serves as a hook, as shown in the illustrations above referred to. When the water in the kettle begins to bubble, shelled white corn is put in and allowed to simmer until it is well swollen. At this point, sifted hardwood ashes are put in, the proportion being about one quart of ashes to a gallon of water. An old hominy sieve basket is frequently used to sift the ashes. The mass is then boiled until the black pips of

FIG. 129.— Seneca woman washing corn, showing use of hulling basket.

the corn loosen and may be seen floating about in the kettle, and the hull slips easily when the grain is rolled between the fingers. Now comes the work of the hulling basket, into which the mass is poured and allowed to drain; then put into a vessel of fresh water, or a running stream, basket and all, as seen in figure 129, and vigorously shaken and stirred with the paddle until the hulls and pips have floated away and the corn is sufficiently washed.

FIG. 130. — Seneca woman pounding corn for bread. Both kinds of basket-sieve and the hulling basket are shown, besides the mortar and the pestles.

Again the kettle is cleaned, filled with fresh water, and the corn put in and boiled until fairly soft, when it is washed again, removing the last trace of lye. At this stage the hulling process is complete and the corn is ready to be made into either bread or *o"no'kwă'*, which latter process will be described first.

During the last part of the process pork or beef has been cooking, and is now combined with the corn, broth and all, and beans added as desired, after which all are cooked together until the meat and beans are done. The result is *o"no'kwă'*, or corn soup, which is

then seasoned to taste and eaten — a delicious if troublesome dish. I have known the first boiling, including the lye, to take three-quarters of an hour; the second, half an hour: about an hour and a half in all for the hulling process. A Cattaraugus variant, obtained from Mrs Thomas Silverheels, states that the ashes should be boiled in the water first, and the corn not put in until the water loses its slippery feel and acquires a sharp biting taste. In other respects the formula is the same, except that Mrs Silverheels specifies that while the first boiling ought to be slow, the second should be fast. She is the woman seen in figures 128–131.

Next to *o"no'kwa'* in importance is *gagai'te" oä'kwa'*, or boiled corn bread, whose base is the hulled corn first described. *Gĕhĭ'dĕ'* (Mrs Sundown), my Tonawanda informant, hulls the corn in just the same way for both *o"no'kwa'* and bread, except that she puts the ashes in *before* the corn when making bread, as in the Cattaraugus recipe noted above. Mrs Silverheels makes no distinction between bread and *o"no'kwa'* when hulling corn. Once hulled and washed, the corn is put in the mortar and pounded into flour, as shown in figures 125 and 130. As the work progresses the fine sieve comes frequently into play, as seen in figure 131, and the coarser part put back in the mortar each time to be still further reduced. When the flour has become soft and fine — as nearly as possible under the circumstances — it is placed in a bark or wooden tray (see figures 125 and 131), or, more commonly nowadays, a tin pan, and mixed with hot water until it becomes a thick dough; then the hands are moistened with cold water and used to slightly knead and mold it into discoidal loaves, or "wheels," each about six inches in diameter and two inches thick. Each loaf is then lifted upon the wooden paddle and lowered into boiling water, where it is turned on edge and supported until it becomes firm enough to hold its shape in the bubbling fluid. Three loaves may be cooked at once in a six-quart kettle. The cooking lasts about an hour, or until the loaves show a tendency to leave the bottom of the kettle and float — an indication that they are done. The bread is sliced and eaten hot or cold with meat gravy, maple syrup, or butter, which last is now commonly used by the Indians. Frequently dried huckleberries, blackberries, or elderberries, or, still more

often, beans, are cooked and mixed through the flour before it is moistened, adding much to the flavor of the finished bread. The Cattaraugus recipe from Mrs Silverheels is similar to the above, with the exception that cold instead of hot water is used to moisten the flour before kneading. While boiled bread is of course absolutely heavy and can be eaten only in limited quantities, it has

FIG. 131. — Seneca woman sifting corn flour through fine sieve-basket into a bark tray.

more of the pleasant flavor of corn than any other dish I have ever tasted.

Most popular among the Seneca after *o"no'kwa'* and corn bread is *onon'da'*, or hominy, an article infinitely superior in taste to anything of the hominy sort that can be bought at the stores. At certain feasts, such as the Strawberry Dance, *onon'da'* takes the place of *o"no'kwa'*. Flint corn forms its base, and the recipes are the same at both Tonawanda and Cattaraugus. A hominy basket full of shelled flint corn is put in the mortar and moistened with a cup

of cold water; then the pounding begins, slowly at first, to loosen the hulls, then fast and hard until the corn is broken small enough to go through the coarse sieve basket seen in figure 123, c. It is then shaken in a pan or a bark tray until the hulls come to the top and for the greater part can be removed. From this the corn is thrown into a kettle of boiling water and cooked slowly for about four hours, with frequent stirrings and occasional skimmings to remove the hulls which still come floating up from time to time. At the end of two hours beans are put in, preferably the slender cylindrical yellowish variety, with purple spots, called *dẽgágẽhad*. For the feast of the Strawberry dance, the wild berries are added somewhat later. The hominy is sometimes sweetened before eating.

Parched corn, or *oshũ^{n}'wä'*, was in former days a very important article of Iroquois diet; but at the present time it is used mainly at certain ceremonial functions, such as those of the *Djadego^{n}'saso^{nʷ}*, or False-face Company (an Indian society), and but rarely at other times. White corn, or one of its two before-mentioned substitutes, is shelled, shaken in a basket to remove dust and husk chaff, and browned in a hot dry kettle or pan, when it is constantly stirred with the paddle to prevent burning. After this the mortar and fine sieve make short work of reducing it to meal, *oshũ^{n}'wä'*. In the old times this meal, mixed with maple sugar and carried in a pouch, formed the great staple of warriors and hunters on long marches, on account of its portability, sustaining power, and pleasant flavor. A little *oshũ^{n}'wä'*, the Indians say, eaten by the side of some spring or brook which could furnish water for mixing and frequent drinks, would give almost the effect of a hearty meal. When used at the False-face functions the parched-corn meal is made into a mush or pudding (*oshũ^{n}'wä' odjı'skwa'*) by stirring it into previously sweetened boiling water, slowly to avoid lumps, and cooking for fifteen or twenty minutes. Not infrequently fried meat with its gravy is added to the mush while cooking; in which case, I understand, the sweetening may be omitted.

A variant of corn bread, but less frequently used, is *degana'ho^{n}sdyä''ko^{nʷ}*, or Indian wedding bread, made like the ordinary variety; but instead of being shaped into the usual round loaves it is molded into the form of two smaller ones, covered and fastened together

wheel-fashion with corn-husks as shown in figure 132, *c*. A number of these are made by the bride's mother at an Indian wedding, and are intended for a sort of feast at which the bride's parents and the young couple eat together. Perhaps the two little loaves bound together were originally symbolic of marriage, but I have no definite evidence on this point.

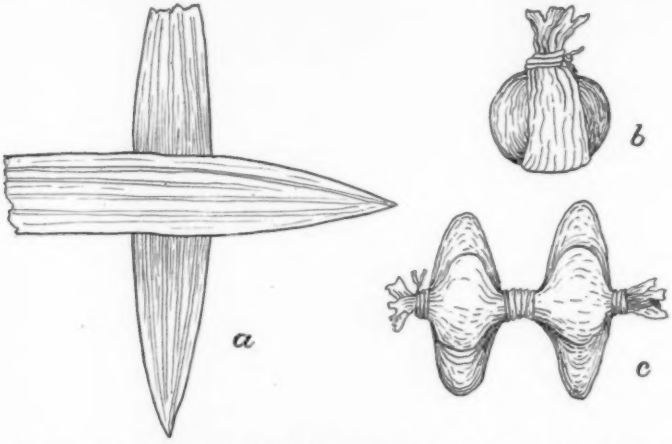


FIG. 132. — *a*, *Onŭ'tcida'* package of corn leaves begun. *b*, *Onŭ'tcida'* package finished. *c*, Wedding-bread package.

Still another variant, now rarely used, is called *ogē^{n}' go^{n}ka oă'kwă'*, and is made in the same way as corn bread but without the admixture of beans or berries. When the loaf is shaped, it is placed in a cavity prepared for it in the bed of an open fire, and covered with coals and ashes to bake. I did not learn how long this process takes, nor how the cook knows when the bread is done.

Ganēo^{n}tē'do^{n} că'kwă' is another very rare form of Indian corn bread, and is the variety most resembling that of the whites. In this case white corn is pounded to a meal in the mortar without previous preparation, and sifted through the fine sieve, then mixed with water and buried in a covered pan among hot ashes until done.

This finishes the recipes obtained for preparing ripe corn; the remaining dishes are made only with green or just ripening grain.

For the first of these, *uista'onon'dä'*, an interesting combination of primitive utensils is used — a large elm-bark or wooden tray in the middle of which is placed a flat stone some eight or ten inches square (fig. 124). As might be expected, the bark tray is now frequently supplanted by a large tin pan. Shelled white corn, just ripe enough to be fairly firm, is crushed on this stone, a few grains at a time, by means of a rounded cobble of proper size to fit easily in the hand. As fast as the grains are crushed they are swept off into the tray until a sufficient quantity is obtained, when they are placed in boiling water with sugar or meat and cooked about half an hour. The meat if used must be pretty well cooked before the corn is put in.

Another green-corn dish is *onū''tcīda'*, made when the corn is somewhat younger than in the last case. After husking, the corn is removed from the cob with the deer-jaw implement before described (fig. 126), the toothed part being used for the rough scraping, the sharp-edged anterior portion for removing the leavings. This was the old style. At the present time the rows of kernels are usually split and shaved off with a knife. Once removed from the cob the corn is then pounded a little in the mortar. Two broad corn leaves are crossed (fig. 132, *a*), and three of the ends drawn together to form a sort of pocket, which is filled with crushed corn and tied into a little package (fig. 132, *b*). Many of these are made and put in hot water to boil half an hour or more, after which they are allowed to cool somewhat, then are opened and eaten with butter, which doubtless takes the place of the fats and oils of earlier times.

A very simple soup is also made by boiling green corn cut or scraped from the cob in a similar manner.

When the *onĕñoñ'gän'*, or white corn, is well in the milk a trench is sometimes dug, about ten feet long, eighteen inches wide, and a foot deep, in which a good fire of small wood is built. Over the ditch near its ends are placed two green cross-pieces of wood, upon which the two lengthwise poles are placed, as shown in figure 133. Against these longitudinal poles are laid many ears of corn to roast, which are kept turning until thoroughly done. Then the kernels are shelled off and dried perfectly hard, sometimes with the aid of the flat basket previously mentioned, and stored in bags until needed. From this roasted dried green corn a dish called *onon'dä' o''no''kwä'* is

prepared by boiling the hardened grain about three-quarters of an hour, then putting in some kind of meat and boiling for an hour or more until done. All this boiling must proceed slowly. The Indians claim that this kind of corn soup is especially good in cold weather.

The last recipe obtained was for a green-corn dish called *ogo"'sä' oä'kwä'*, which is prepared as for *onū"'tcīda'*, with the exception that the pounded green corn when taken from the mortar is not done up in corn leaves, but is baked brown in a common baking dish placed in the oven of a modern stove, now owned by most of the Indians. The cake is removed from the oven, dried, and broken

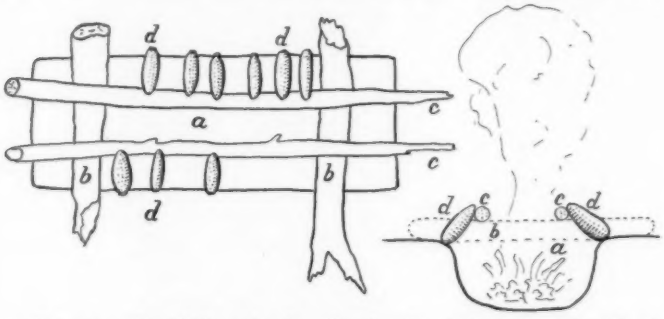


FIG. 133. — Ground-plan and section of roasting pit. (*a*, Fire-pit. *b*, Cross-logs to support longitudinal poles. *c*, Longitudinal poles to support corn. *d*, Roasting-ears of corn.)

into small pieces, which are stored for future use. When needed the corn is boiled soft and eaten with meat gravy as one would eat beans. This recipe seems at sight to be of modern invention, but a glance at Morgan's article, before mentioned, shows that it was extant in his time, about 1850. It appears that the modern oven baking, however, has supplanted baking in pans or in earthen dishes placed directly on the fire — probably in the ashes.

It cannot be denied, in concluding, that the Iroquois as a people are rapidly discarding what remains of the old life and customs. For this reason it would seem that any remnant of information that may still be obtained, especially when it relates to such an important matter as their ancient use of corn, their great staff of life, and the Indian's best legacy to civilization, is well worth the saving.

NEW YORK CITY.

THE GROUNDWORK OF AMERICAN ARCHEOLOGY

By EDGAR L. HEWETT

In American Archeology man in the cultural process is the unit of investigation. This establishes the limits of the science. Its subject matter lies mainly in the prehistoric period, but this must be studied in the light of auxiliary sciences which have for their field of investigation the living people. It necessitates the study of all phenomena that will add to our knowledge of the intellectual attainments of the native American races or illustrate the evolution of their culture. It aims at a reconstruction and interpretation of the order of civilization existing in America before the Caucasian occupancy.

Nowhere had these races attained to the art of literary expression, though in Central America they were verging upon it. The record of their progress must be sought, first, in the remains of their material possessions; second, in survivals of their intellectual achievements written and unwritten, and, third, in the recorded observations of eye-witnesses to scenes and events of the historic period. Their arts afforded a means of lasting self-portraiture. These display the common abilities and common beliefs of the people and reflect the racial progress. They illustrate the gradual conquest of mind over natural forces and materials. Architectural and industrial remains illustrate the evolution of the social order. Sculptural and pictorial remains display the stages of development of the esthetic sense, and, through the symbolism in which they are expressed, embody the common conceptions of things spiritual, the early phases of the upreach of mind, the first efforts to enlist the aid of supernatural beings — in short, all the primitive methods of attacking the fundamental problems of existence. While entirely racial at this stage, results in individuation are foreshadowed. In primitive arts we have the mirror of the racial mind.

There are also recoverable remains of the intellectual possessions of the ancient Americans in the form of survivals of archaic cere-

monies, rituals, and traditions of living tribes. These are vital to the understanding of the life and history of the people, and because they reflect the inventional, esthetic, societary, and sophic processes through which the highest cultural achievements of the past were reached, they furnish keys to the interpretation of conventional modes of expression. For the same reasons it often becomes necessary to investigate the history and structure of languages among living tribes situated in such proximity to ancient cultures that historical relationships may be suspected. For information on questions of racial affinity, the aid of somatology may be invoked. However, our province is mainly the study of cultural phenomena and limits.

The history of any surviving group of native American people may be divided broadly into two epochs. The first represents a vast reach of time, during which the autochthonic character of the race was unfolded, a period of racial isolation, of unadulterated culture. The second begins when the group is touched by outside racial influences. This represents at most a period of four centuries, its beginning depending upon the time when Caucasian influence penetrated the group in question. Until the racial isolation was broken by the coming of the Spaniards, bringing in new industrial methods, new incitements to activity, and new ideals of achievement, the simple ethnic mind had not been an object of contemplation to itself. Unconscious of its limitations or of its status in culture, because ignorant of any other, its expressions in the form of arts, ceremonies, and symbolism were perfectly naïve. With the coming of the Spaniards a period of racial self-consciousness began. The simple process of unfoldment of culture gave place to the complex phenomena of ethnic mind acted upon for the first time by external stimuli of a most violent sort, and thus suddenly aroused to consciousness of its own operations and limitations. The quality of mind developed under such conditions is radically different from that developed under the influence of a definite natural environment only. There was immediate selection of esthetic, industrial, societary, and religious elements from the conquering race. Arts, industries, and social conditions underwent vital modifications. The ancient social and religious order was broken down and reorganized along new lines.

Ceremonies disintegrated with the passing of the clans in which they were developed. Primitive ritual took on numerous aspects of Christian worship which immediately resulted in the corruption of symbolism. The term acculturation, an adding to culture, describes the process that resulted in the present condition of the American aborigines.

The study of the phenomena of this epoch is more complex than that of the earlier period. The process of separating the recently acquired from autochthonous elements is laborious, and the chances of error numerous. Traditionary episodes, ceremonies, rituals, and symbolism must be subjected to critical analysis. However, there is a valuable residuum of facts of archaic culture resulting from the sifting.

The study of prehistoric archeology presents less complexity. Definite external surroundings give rise to definite efforts of the human mind to utilize, to overcome, and to account for them. The result is certain activities, the dynamic expression of the cultural process. The study of this process in the stage prior to the intrusion of any foreign elements, in the light of facts which ethnology lends to the interpretation of archaic phenomena, is a field comparatively free from the necessity of conjecture. The service which prehistoric archeology is capable of rendering to anthropology is comparable with that which paleontology renders to biology.

In the study of the historical development of the native American races, it becomes necessary to eradicate all political divisions and to find cultural limits instead. These coincide to some extent with natural boundaries giving rise to "culture areas." This term is used to designate a region in which some dominant type of cultural phenomena prevails to the subordination of all other types. Such an area is the so-called Pueblo region in the southwestern part of the United States. Numerous areas of this character are more or less clearly defined from Alaska to Central America.

All information that we possess at the present time tends to establish the fundamental unity of the American race and points to an evolution from lower to higher civilization. The time element in this process is by no means constant. The gap between the lowest and the highest ethnic groups might have been closed by a

generation or two of influence under favorable surroundings, or it might have required many centuries in the absence of such stimuli. In the flowing of populations that prevailed in prehistoric as in historic times, groups were segregated from parent stocks, carrying with them the ancient traditions, and as a result of isolation new and distinct seats of population arose, flourished, swarmed, and degenerated. While there were no means of storing up knowledge such as we possess, yet in the form of tradition it was transferred, replanted, and engrafted to such an extent that it may reasonably be doubted if any vital possession of the ancient races of America has passed into total oblivion.

It is necessary to investigate the fundamental causes of these specializations in culture, to ascertain and follow the direction of waves that flowed out to occupy new localities and influence other communities. The determination of affinities between widely separated regions requires long and laborious study of fixed remains in the field as well as of the movable antiquities to be found in the museums of the world, and together with the no less important investigation of the religious and social traditions which survived the shock of the conquest, calls for the correlated activities of many students and institutions.

Another important line of research in American Archeology is that of archive work. The records of those who had the opportunity to observe the native races at the beginning of the period of acculturation through contact with the intrusive race are of such a character as to be of great service. Voluminous as has been the publication of historical works on aboriginal America, there are yet archives of great extent in Mexico and Spain which have never passed under the eye of the historian. It cannot be doubted that much valuable material relating to the early historic period awaits discovery. The present time seems particularly opportune for undertaking the examination of the unpublished material in the Archives of the Indies and for the reëxamination of much that has been published in the past. In the early literature on America there is little that comes up to present-day standards of historical research. There is now great need for a reëxamination, in the light of present-day ethnological knowledge and by the critical methods

of modern historical research, of source material that has been much used in the past in historical and archeological interpretations. It is not sufficient that the archives be explored and unpublished documents correctly copied and given to the public. Discriminating analysis and critical comparison are necessary, if the truth about ancient America is ever to be recorded. It must be remembered that these are not the records of trained scholars seeking to make known actual facts. They are, on the contrary, the accounts of untrained observers biased by the excitement of conquest and moved to exaggeration by the desire to influence royal and ecclesiastical action at home.

The first task of the archeologist is to rescue the material and intellectual remains of the people whose history he is seeking to restore. It can never be hoped that a continuous record will be recovered, but the greater the amount of material secured the more nearly complete can it be made. But archeological research is more than the recovery and study of material. As history is not only a recital of events but an inquiry into their genesis, it is imperative to investigate and describe all phenomena upon which such events are conditioned. Therefore it is the belief of the writer that physiographic conditions are essentially correlative with facts of culture, that physical and psychic causes are to be held in the closest possible relation if we are to correctly interpret the intellectual remains of the native races of America, whether in the form of myth, ritual, and symbolism of plains and desert tribes, or in architectural, sculptural, pictorial, and glyphic remains of the Mexican and Central American civilizations.

ARCHÆOLOGICAL INSTITUTE OF AMERICA,
WASHINGTON, D. C.

THE EXCAVATION OF THE CANNONBALL RUINS IN SOUTHWESTERN COLORADO[1]

By SYLVANUS G. MORLEY

The region of the Four Corners, that geographical monument which has the distinction of marking the only spot in this country where four states, namely, Colorado, Utah, Arizona, and New Mexico, meet at one point, is interesting also because of the surpassing opportunities which it presents for archeological research. The San Juan river and the cañons which its tributaries have cut for themselves in this part of the Great American Plateau offered a more suitable environment for the development of a primitive culture than for the support of our own race, of which a few stragglers only have been able to win a doubtful foothold in the arid cañons and on the barren mesas in which this region abounds. On every side, sometimes a two or three days' ride from known water, one encounters the shapeless piles of fallen masonry overgrown with sage, cactus, and piñon, which so eloquently testify to the former density of the aboriginal population: a density which the cattlemen of the country do not hesitate to affirm outnumbered that of the present day ten to one.

The several cañons of the San Juan drainage afforded in earlier times shelter to as many peoples, differing from each other in the minor points of their culture, such as the development of pottery decoration, the restriction of design to the geometric in one region, the tendency toward the realistic in another, but all resembling one another strongly in the broader lines of their culture, such as the technical processes employed in the making of pottery, and the fundamental principles of their architecture. This fundamental unity, which seems to underlie the different groups of peoples that

[1] Mr Morley's paper is a preliminary report of the field work of the Colorado Society of the Archæological Institute of America for the season of 1908. The work is conducted by the School of American Archæology in coöperation with the State University and the State Historical Society of Colorado. — EDGAR L. HEWETT, *Director*.

inhabited these cañons of the San Juan drainage, is seen to advantage in the ruins of the northern tributaries of that river. The treatment of building materials and the selection of building sites, on the architectural side alone are only two of many points that show the broad similarities of the different groups. And yet such are the differences, due to isolation and to local dissimilarities of environment, even between peoples of adjacent cañons, that it has been possible to classify the primitive inhabitants of this region into different culture groups, each characterized by certain distinguishing features that differentiate it sharply from all the others.

McElmo creek, on one of the tributaries of which the Cannonball ruins are situated, rises in southwestern Colorado and after flowing due west to the Utah line turns somewhat south and gives into the San Juan about fifteen miles below. The most striking characteristic of the ruins of the McElmo area, which differentiates them at once from those of the Mesa Verde immediately to the east and Montezuma creek to the west, is the peculiarity of their location. While the buildings of the Mesa Verde on the one hand are situated in natural caves or under overhanging ledges left by some freak of erosion, those of Montezuma creek, on the other, occupy the centers of the mesas that separate the cañons one from another. The structures of the McElmo area are essentially rim-rock dwellings; that is, they are built on the very edges of the mesas and overlook the cañons, the sides of which are frequently so precipitous as to be well-nigh inaccessible.

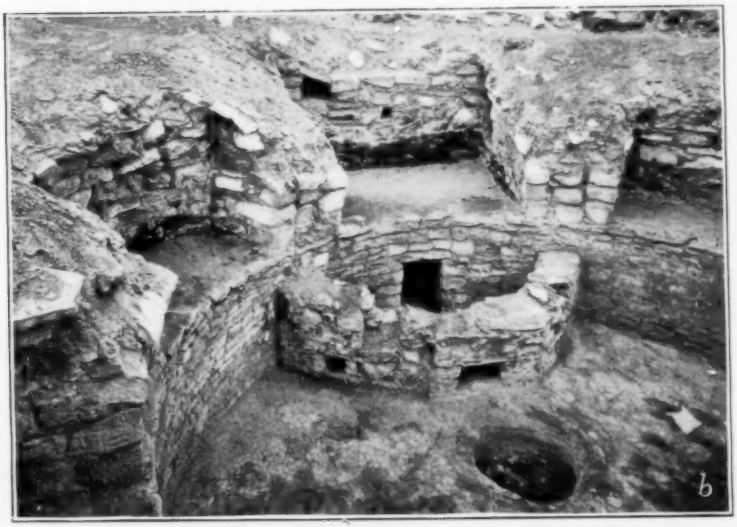
The Cannonball ruins are situated at the head of a small cañon of the same name, which empties into Yellowjacket cañon, the most considerable northern tributary of McElmo creek. This group is composed of two pueblos on the opposite rims of the cañon from each other, and a square tower built upon a detached rock in the bed. The two pueblos are built upon the very edges of the mesa. The cañon wall below them drops twenty feet or more sheer. This huddling close to the rim insured impregnability from any attack that might have been directed against the settlement from enemies in the cañon itself, while the watchtower was so placed as to give ample warning of invasion from that side and thus afforded an additional element for safety. It was from the mesa side — the back-

yards of their houses, so to speak — that danger from without was chiefly to be apprehended; and the manner in which this difficulty was overcome illustrates well the architectural adaptability of this people. They built no first-floor outside doorways in walls facing upon the mesa, a practice that holds true not only for the two pueblos of the Cannonball group, but also for all the more important ruins of the McElmo area. Indeed no example of a first-floor doorway facing on the mesa side was observed in any of the ruins of this region. Entrance to structures was effected by doorways in the sides that front on the cañons. These open upon narrow ledges between the house walls and the cañon edges, varying from two to three feet in width. Flanking walls from the corners of the houses nearest the cañons cut these spaces off from the mesas. To reach them from below, ladders or notched trees doubtless had been employed, all traces of which, however, have long since disappeared.

The Southern and smaller pueblo of the two, was the one selected for excavation by the Colorado Branch of the Archæological Institute of America during the field season of 1908. It stands on the southern side of the cañon, facing north, with its long axis east and west. The ground rises gently from the back of the structure for about two hundred yards to the summit of the mesa, and then falls off gradually for the same distance on the other side to the southern edge, there breaking off sharply into McElmo cañon. In the course of time the rocky top of the mesa has become covered with a red soil into which the red sandstone of this region disintegrates. This supports a sparse growth of sage, cactus, greasewood, scrubby piñon, and a limited quantity of tuft-grass. Originally, at the time of the occupancy of the pueblo, the mesa top had been under cultivation. There seems to have been a considerable irrigation system, consisting of a reservoir and several irrigating ditches east of the pueblo. Quantities of corncobs and the seeds of a species of squash found in abundance during the course of the excavation indicate at least two of the crops harvested by the aboriginal inhabitants.

The Southern pueblo is close to the edge of the rimrock, as may be seen in plate XXXVI, *a*, with its long axis parallel to the cañon edge. The maximum length is 114 feet, the maximum breadth

SOUTH PUEBLO, SHOWING PROGRESS OF EXCAVATION



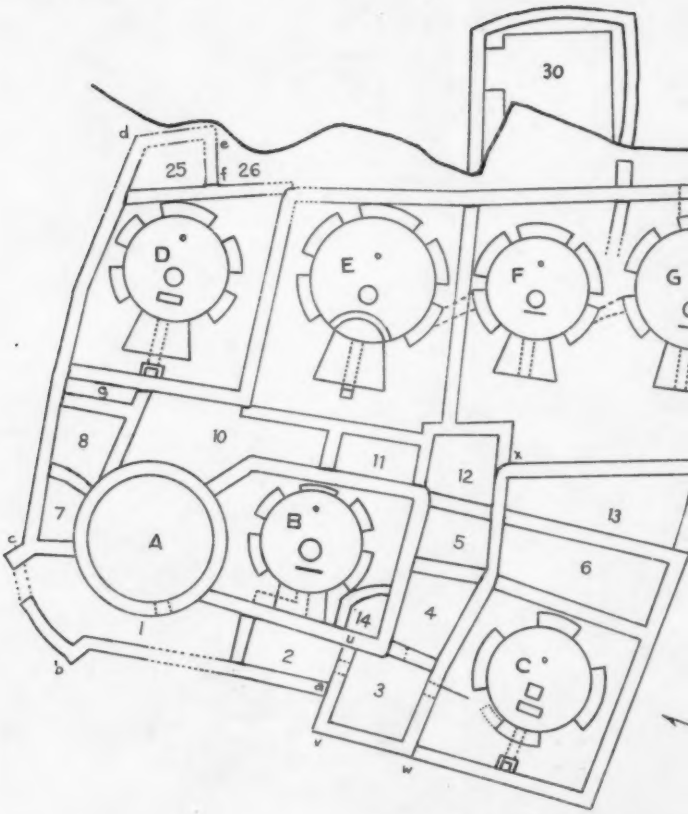
INTERIOR OF KIVA E

72 feet. The walls, for the greater part, are broken down to within three or four feet of the ground, though the tower seen in the photograph to the right in the background still stands to a height of ten feet, and a section of wall at the left rises five or six feet higher. The floors of the building are on two different levels, the front range of rooms being lower by some eight feet than the back range. The lower range (see plan, pl. XXXVII) is composed of five kivas, or circular rooms, excavated in the soil of the mesa to such a depth as was necessary for the utilization of the rim-rock as the flooring. The upper range of rooms have their floors on the same level as the roofs of the five kivas of the lower range, that is, on the same level as the mesa outside the walls. In addition to this step-like arrangement proceeding from the rooms fronting on the cañon to those on the mesa side, the rooms are progressively lower from west to east, or from right to left in the illustration. This latter difference in floor level (that from west to east) is due to the configuration of the rim-rock, its gradual descent toward the head of the cañon, and is wholly accidental; but the other inequality, the step-like arrangement from front to back, is due to the necessity which these people apparently felt for having their ceremonial rooms, the kivas, subterranean or semi-subterranean. All examples of this type of room found in the McElmo area were either wholly subterranean or nearly so.

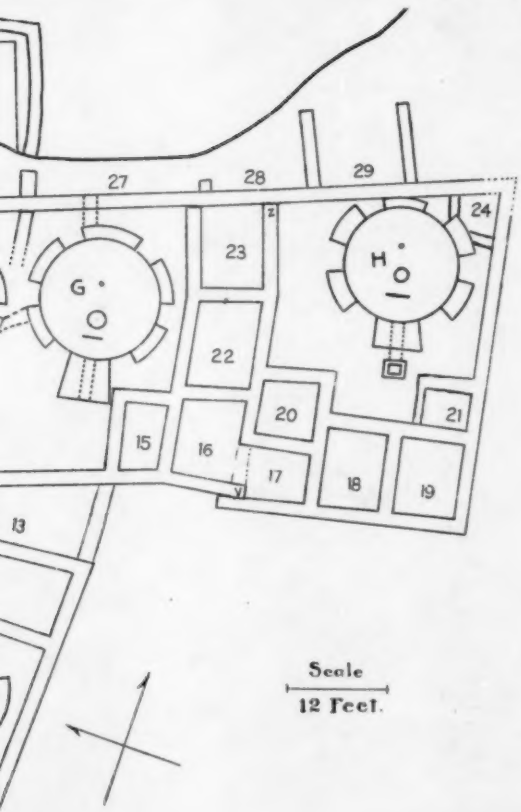
One interesting point that developed from the work is the fact of growth by accretion through which this pueblo attained its ultimate size. That it was not originally conceived as it now stands, but was expanded and enlarged as the demands of a growing group necessitated, rather than according to a predetermined scheme of development, appears from a glance at the accompanying plan. The ground-plan of the ruin is singular: rooms are of irregular shape, their relation one to another apparently haphazard, exhibiting no conformity to a preconceived plan. Walls are not always straight, but abound in curves and offsets. Such irregularity could have arisen only in a building that grew by accretion, where rooms were added when needed, and needed only when the natural growth of the group filled to overflowing the older rooms. Such a growth by gradual accretion would well account for the observed irregularity of the ground-plan. Some parts of the building may have

been added scores of years after the first rooms were built. The strongest confirmation which this theory of growth by accretion has, however, is not derived from the observed irregularity of the ground-plan, but from the character of the masonry at corners and points where walls intersect. In most places where two walls intersect, the masonry of the walls intersecting is not bonded, but one wall simply abuts against the other. This abutting of one wall against another, and the absence of any intertying walls, is a practice which inevitably would have resulted when new walls and rooms were added to those previously existing. The various places in the building where walls and rooms have been added to others already standing is clearly distinguishable in the masonry. In some cases the abutting walls have sagged away from the wall against which they abut, to such an extent indeed that it is possible to thrust an arm into the resulting crack. In other places the abutting wall has separated from the other so slightly that it would be difficult to insert a knife-blade into the opening. But always the line of intersection is sharply drawn, and never is it broken by stones which bind both walls together by having an end laid in each. This question of growth by accretion, a fact which holds true for the other larger ruins of the McElmo area, seems to go back for its explanation, in part at least, to the probable sociological organization of the ancient builders.

The kiva, or circular ceremonial room, of which every ruin in the McElmo area, great and small, has one or more, is the place in and around which the religious life of every pueblo community centered. In the case of the single family, the unit of every social organization, a kiva with several attached living-rooms sufficed for the needs of the group. But when the group expanded, when the daughters of the family grew to womanhood and drew husbands from other groups — for in the matriarchal system of descent prevalent among the Pueblo Indians of the Southwest such is the practice to-day — one kiva eventually proved too small to accommodate the people of the group, so that others with their dependent living-rooms were added. Thus the building expanded to house the growing population. Succeeding generations necessitated, from time to time, more or less extensive additions, so that the pueblo as we find it to-day is the result of gradual growth.



GROUND PLAN OF SOUTH PUEBLO
(Surveyed and Drawn by J. H. Morley.)



...TH PUEBLO
(J. H. Morley.)

The presence of the abutting walls, just mentioned, throughout the building has made it possible to trace the steps through which the structure passed to reach its final proportions, and to show relatively the differences in age between its several parts. From all indications Tower A (shown in plates XXXVI, *a*, and XXXVIII) is the oldest part of the settlement. All five of the walls that radiate from it merely abut against, and do not penetrate its curving wall at any point. Tower A stands as the nucleus of the pueblo around which the building grew from time to time. The first addition to this seems to have been Kiva B and the wall that encloses it on the eastern side. This enclosing wall touches the tower wall at two points, but does not penetrate it at either, showing thereby that it is of later construction than the tower, though it is impossible at the present time to estimate the actual time difference between the two. Some time after Kiva B was built, wall *u-v-w-x-y-z* was constructed, and rooms 3, 4, 5, 15, 16, 22, and 23 were added to the pueblo. Subsequently wall *a-b-c-d-e-f* was built, and rooms 1, 7, 8, and 9 were added. Still later Kivas D, E, F, and G, and rooms 25, 26, 10, 11, and 12 were added, and lastly, on the northeast corner, the addition which contains Kiva H and rooms 20, 17, 18, 19, and 24. What place the section that contains Kiva C and rooms 6 and 13 occupies in this scheme of development, it is impossible to say, except that it is of a later period than the addition containing rooms 3, 4, 5, 15, 16, 22, and 23. Just how long a period elapsed between the building of Tower A and the finishing of the latest room, perhaps room 13, is a matter of conjecture only. It may have been two or three decades or as many centuries. The time element seems unimportant beside the fact that the growth was gradual, an architectural adaptation to the requirements of social organization.

The most important development of the architecture of these ancient inhabitants is the kiva, their ceremonial room, of which there are seven examples in the Southern pueblo of the Cannonball group. These are in the main of uniform type in this ruin, differing from one another only in unimportant details. They are circular and subterranean, ranging in diameter from eleven to thirteen and a half feet, and in depth (i. e., height) from six to seven feet. About three eet above the floor there projects from the vertical wall, which forms

the sides of the kiva, a slight ledge. Above this the wall has six panels, or recesses, which range in width from three to five feet, and in depth from one to four feet (pl. XXXVI, *b*; pl. XXXVIII). These recesses, which reach from the ledge just mentioned to the roof-beams, are symbolical of and were probably consecrated to the six primal directions — the four cardinal points, the zenith, and the nadir. The orientation of these recesses, while far from astronomically accurate, conforms roughly in all the kivas of this pueblo to the cardinal points: north, northeast, southeast, south, southwest, and northwest. The south recess was probably the most important. It is always very much deeper and usually a trifle wider than the other five, and also it is beneath the south recess that the horizontal passage leading to the vertical exterior shaft passed. The other features in the bottoms of the kivas of this pueblo are even more uniform than the above division of the upper half of the wall into six recesses, since one of the kivas, Kiva C (see plan), has but four recesses, one for each of the cardinal points. Just south of the back wall of the south recess there is a vertical shaft (present in all seven of the kivas), about a foot square, reaching from the surface of the ground (i. e., the roof level of the kiva) straight down to the level of the kiva floor, where it gives into a passage underneath the sill of the large south recess and opens into the kiva wall through an entrance about two feet high and a foot to a foot and a half wide. About two feet in front of this, and in a line joining the middle points of the north and south recesses, is a slab of sandstone three feet long by two high and two or three inches in thickness. This was found in four of the seven kivas examined. Another type of the same device, found in the remaining three, is of masonry — squared faced blocks of stone laid in adobe mortar. These vary in height from one to two feet, and in length from two to three feet; the thickness however is uniformly one foot. Immediately north of the object just described is the fire-pit, usually round, but square in two of the seven kivas. It was invariably found filled with fine white wood ashes, closely packed. The adobe sides of the pit in all instances had become vitrified to brick by constant use. The remaining feature of importance in the kiva is a small round hole in the floor, averaging in the kivas of the Southern pueblo three and a quarter inches in diameter and slightly

WEST END OF SOUTH PUEBLO, PARTLY EXCAVATED

under seven inches in depth. These holes, which have been identified by Doctor J. Walter Fewkes of the Bureau of American Ethnology with the *sipapu*, or ceremonial entrance to the underworld, as used by the modern Hopi Indians of Arizona in their kiva worship, are of two types: a straight cylindrical excavation in the floor, with vertical sides, and diameter at top and bottom the same; the other a bowl-like excavation with narrow neck bellying out below. This latter type frequently had its narrow opening made from the neck of a broken bowl, which was simply plastered into the opening of the sipapu. The sides of these sipapus are of well-smoothed adobe. The edge made by the hole breaking through the surface of the floor has in all cases been rounded off. One curious point in connection with the sipapu as found in the Southern pueblo is, that when uncovered, every one of them was found to be filled with red soil closely packed to the floor level — the same red soil that covers the mesa top outside the building. Whether they had been intentionally filled by the ancient inhabitants before the structure was abandoned, or whether the choking up was accidental, it is impossible to determine positively. However, the most logical explanation seems to be that dirt and dust had blown in through the door in the roof or through the vertical shaft and had choked up the sipapu before the roof fell in and filled the entire kiva with dirt and masonry debris. Each of the seven kivas examined has at least one niche and most of them two niches, or small recesses, doubtless used for storing prayer-meal and other articles connected with the kiva worship. These are situated in the sides, below the slightly projecting ledge which marks the sill level of the six large recesses, consecrated to the six directions. These small niches, if present, are always found in the same location in every kiva. The larger one, about ten inches high by twelve inches wide and deep, is always found just under the northeast recess. The smaller niche, about six inches high, wide, and deep, is the less common of the two, and, when present, is found underneath the north recess.

Turning now to a discussion of the masonry of the Southern pueblo. The building blocks are found to be of red sandstone, a material particularly well-adapted to the needs of the aboriginal mason by reason of the ease with which it could be reduced with

primitive stone tools. The character of the masonry differs widely in the several parts of the building. Some sections, particularly the tower and the kiva interiors, show fine workmanship. The tower wall, perhaps the best in the entire building, is constructed of two courses of masonry, an outer and an inner layer of dressed stone. The stones of the outer layer appear to be square, or nearly so, but in plan they are sectors, the better to fit the curve of the wall. The stones of the outer layer are more neatly dressed than those of the inner one, and show clearly the peckings of the tool with which they were faced. They are more carefully fitted to conform with the curve of the tower than those of the inner layer, probably because the curve of the former is less sharp than that of the latter. The inner layer is composed of flatter stones, sufficiently smaller than those of the outside that the curve of the tower could be followed without the necessity of giving the inner stones concave faces. Within and without the masonry is fairly accurately coursed, but no breaking of joints is apparent. Indeed it may well be doubted whether the principle of breaking joints as we understand it was ever practised in any of the aboriginal masonry, and such of it as does occur here and there sporadically throughout the ruins seems to be rather more the result of accident than of design. The binding material was an adobe mortar, made, judging by its color, from the red soil found in abundance on the mesa top nearby. The spaces between the stones of the walls were filled with small rock spalls, which, when in place, forced the mortar closer against the wall stones; rain, however, has long since washed most of these away. It is a characteristic of this masonry that the outside walls are much more neatly dressed and coursed than the inside walls. The reducing, pointing, and facing of the rough sandstone seems to have been accomplished with a sharp implement. The small pits made by it are clearly distinguishable in any number of the carefully dressed stones used in the kiva interiors. Side by side with this high-class work of superior finish are found other sections where the building stones have received no dressing, having been fitted into the wall in the rough as they were broken by the stone mauls of the long-forgotten builders.

The greatest elements of weakness in the McElmo buildings

were: the failure to break joints, and the absence of a suitable mortar. These two causes more than all others combined have contributed to the masonry disintegration which is so widespread in this region; and yet notwithstanding these grave architectural defects, many buildings now fallen would still be standing had they not been overthrown by the vandalism of the modern digger in his unscrupulous quest for so-called "Aztec pottery."

One rather remarkable feature of the Southern pueblo is the rarity of doorways. In the entire building but four are intact, though the demolition of many of the walls may account for this comparative scarcity of entrances. The best doorway is the one in the southeast side of the tower. It is three feet three inches high, by one foot six inches wide, and its threshold is one foot two inches above the floor level. The jambs are of the same well-dressed stone as the outer layer of the tower masonry, showing the same surface peckings of the reducing tool. The lintel had been composed originally of seven small sticks, each about two inches in diameter, which rested upon the top stones of the jambs. The interstices are filled with adobe. The threshold is composed of several stones, none of which shows signs of any considerable wearing. This, coupled with the rather considerable height of the doorway (three feet three inches), lends color to the idea that the original sill is missing. A heavy stone just the width of the doorway, highly polished as if from long wear, and smoothed flat, found just in front of the door, gives confirmation to this assumption. There are two other inside openings in a room east of Kiva B. The first of these is one foot five inches high and two feet three inches wide. The lintel is composed of five cedar sticks, each about an inch and a half in diameter; these formed the support for a supernumerary lintel, a sandstone slab two inches in thickness. The other opening is two feet ten inches high, and one foot nine inches wide. The lintel is of stone and the sill is missing. The fourth and last doorway is in the front of the building, giving access through a passage into Kiva G. It should be noted that the first three of these doors are inside and that the fourth opens on to the narrow ledge between the building and the cañon.

Floors throughout the building were made of adobe. In the

kivas this was rather gray in color; in other rooms it had been much blackened by fire. Floor excavations showed superimposed floor levels; and from some rooms bowls and bone implements (awls, needles, etc.) were taken from beneath the upper floor level.

All traces of the roofing have long since disappeared, except perhaps a rotting beam here and there. The method practised, however, was doubtless the same as that which may be seen to-day in some of the structures of the Mesa Verde — main beams, across the short dimension of the room, upon which rested a layer of split cedar or of small sticks an inch in diameter. Upon these were spread the inner bark of the cedar, and lastly adobe poured generously on top to the depth of three or four inches. The fiber prevented the adobe, when wet, from leaking through the layer of split cedar or small sticks. This covering, once the main beams had fallen, rapidly disintegrated; the adobe, fiber, and small sticks rotting into and forming the soil, which, mixed with the fallen walls, filled all the rooms.

The specimens found during the course of the excavations are those of objects such as might be expected to have been used by primitive people. Stone axes, corn grinders (manos and metates), and worked stones for other uses, bone awls and needles, and a good representative collection of pottery. As was to be expected in the excavation of a house-site, few human remains were found, eight skeletons only, some incomplete, having been discovered, of which five were adults and three were children between one and two years of age. The skull of one of these latter, the best preserved, appears in the accompanying illustration (pl. XXXIX). Of the five adults, the entire skeletons of three were recovered. Assigning to the femur a proportion of twenty-seven percent of the entire length of the body, these three are found to be: 5.2 feet, 5.28 feet, and 5.47 feet in height, or all under five feet six inches. These values are doubtless a little low, but even discounting the slight shrinkage which inevitably takes place between the living body and the skeleton, the heights thus attained are surprisingly low. While three skeletons are far too few to form the basis for sweeping generalizations, there seems to be here, nevertheless, the possible indication that the height average among the builders of these structures was considerably

OBJECTS FOUND IN THE EXCAVATIONS

below that of our own race. All the skulls of the adults are artificially flattened at the back. The teeth in most cases showed excessive wear, doubtless due in part to the fact that many particles of sand or pulverized stone became mixed with the corn in the grinding and were eaten along with the meal. One skull is interesting because of an indentation, about a quarter of an inch deep, in the middle of the frontal bone. This had been caused by some sharp weapon, but that it had not caused the death of the individual wounded is seen from the manner in which the rough edges of the wound on the inside of the skull have been smoothed and rounded by the filling in of bony tissue after the wound had been inflicted.

Of stone implements by far the most common are the axes, of which there are thirty-two in the collection. These form a series ranging from crude rejects, which had been thrown aside for some defect or other after having been roughly blocked out, to finely executed, sharp-edged axes in hard materials. All the axes save two are of one type: a single sharpened edge with a single hafting groove in the middle. The larger of these two is fully nine and a quarter inches in length and must have been a formidable weapon when hafted to a long handle. Of other stone implements five stone disks were found, ranging in thickness from one-half to one and a quarter inches, and in diameter from four and a half to eleven inches (pl. XXXIX, *a*). Their use is unknown, but it is not improbable that they may have served as lids or coverings for the sipapus, when these ceremonial entrances to the underworld were not in use. Three of the five were found in kivas. The collection contains a few ceremonial axes, or skin-scrapers as they have been identified by some (pl. XXXIX, *o–r*.) A few small cylinders (*l*, *m*) from one-quarter to one and three-quarters inches in length and of uniform diameter, one-half to nine-sixteenths inches, were found. The use of these is unknown, though it has been suggested that they are paint-sticks, as the hematitic red rubs off if drawn across a rough surface.

One rather remarkable feature of the finds is the scarcity of objects of the projectile-point type, seven only being found. Of these four are blades (*f–i*) and three arrowpoints. One of the blades, as may be seen in the photograph, is notched on one side.

Few specimens of wood were recovered, because of the extreme perishability of that material. Two spindle-whorls of wood, however, were found, one round and the other square (*k*), and also a wooden form (*n*) for stitching skins, used after the fashion of modern darning balls.

Only a single fragment of basketry, of the coiled type, was found. The technique is finished, and it is to be regretted that more remains of this character were not recovered.

By far the most interesting and at the same time artistic class of objects recovered is the pottery. Of the ceramic art of this people one cannot speak too highly. In technique, execution, and artistic effect, they excelled. The application of geometric designs in black to a smooth surface of gray-white makes a harmonious contrast of background and decoration most pleasing to the eye. All of the pottery taken from the Cannonball ruin falls into one of two types, with an intermediate type — comparatively rare — connecting the two.

The first and by far the more common type is the black and white ware, seen in the accompanying photograph (pl. XXXIX), made by all the peoples of the San Juan drainage. This is found in a variety of shapes : mugs, shallow basin-like bowls, lids, ladles, jugs, and large ollas, or water-jars. The decoration of this black and white ware is almost exclusively confined to geometric forms in this ruin, the fragments of one bowl only being found which exhibits a realistic motive — a conventionalized bird. This restriction of designs to the geometric in one region and the prevalence of realistic forms in another perhaps but a few miles distant, and the sharp differentiation between the two are matters of common occurrence throughout the San Juan drainage. These very facts, no doubt, when the archeology of the region shall have been more thoroughly studied, will shed much light on the movements of the groups of peoples in this region.

The second type is the coiled pottery used chiefly as cooking pots or water-jars. A single example of this ware may be seen in the middle of the accompanying photograph. The example here represented is a small bowl, with slightly narrowing neck terminating in a lip, and is rather an uncommon shape for this coiled ware.

The regular and apparently the only other shape into which the coiled ware was fashioned is the olla, or water-jar. The clay which went into the making of these coiled pots is greatly inferior to that used in the black and white ware, and has resisted the action of the elements much less successfully; so that perfect pieces are extremely rare, and the reconstructed pieces difficult to assemble because of the extreme friability of the sherds. The coiled ware bears no decoration other than the indentation of the coils at short intervals, applied in the making, so that each coil will adhere firmly to the coil next below it; and a scroll appliqué attached near the rim of the olla in four places, ninety degrees apart.

The third type, mentioned above as occurring but rarely, combines the other two. The bodies of the pieces of this type are like those of the black and white ware in every detail. The necks, on the other hand, show the corrugated effect made by the indented coils of the second type. It is a combination ware, wherein the body of the piece is drawn from one type and the neck from the other. No perfect piece of this ware was recovered, and only a few sherds of two or three fragmentary bowls.

Ceramics and architecture: these are the two lines along which the aboriginal inhabitants of the McElmo and adjacent areas, the Mesa Verde, Montezuma creek, and doubtless the entire San Juan drainage, reached their highest development. The importance of the kiva and the part it played in the life of the aboriginal inhabitants, not only of this restricted area of the McElmo drainage, but also of the entire Southwest, cannot be overestimated. Even today, after more than three centuries of white domination, during which period the region has been overrun and persistently Christianized, the dwindling remnant of the Pueblo Indians still clings tenaciously to its kiva mysteries. Every pueblo has at least one kiva, and sometimes several, as Taos in northern New Mexico. These are the rooms where preparations for the dances are made, where councils are held, and where the ceremonies of the pueblo take place — where, in short, the religious life of the group centers, and from which emanates the influence that regulates all the affairs of daily life as well as defines man's duties and obligations to his Makers. A closer study of modern kivas will no doubt shed much

additional light upon those of ancient times, and at the same time dispel in large measure much of the darkness that shrouds the life of the aboriginal inhabitants of the Southwest. Indeed contemporaneous studies among the Pueblo Indians must go hand in hand with archeological research if we are to clear the mystery that surrounds the ancient civilization — contemporaneous studies which must be made in the near future if we are to preserve the ancient life and learning before its customs and traditions have been snuffed out by the advances of a higher and more aggressive civilization. Already tribal ties are breaking down, and the day is not far distant when the Pueblo Indian and his civilization will have fallen into a decay for which there is no future and only a silent past.

PEABODY MUSEUM, HARVARD UNIVERSITY,
CAMBRIDGE, MASSACHUSETTS.

SURVIVORS FROM THE CARGO OF THE NEGRO SLAVE YACHT *WANDERER*

By CHARLES J. MONTGOMERY

With a Note by Frederick Starr

The story of the *Wanderer*, which began its career as a pleasure yacht and ended as a slaver, has been told before; but little has been said of that human freight which it brought to this country from the coast of Africa, and it is to this that our attention is here directed.

It may be recalled that the year 1858, when this yacht sailed across the Atlantic with the only cargo that it ever secured, was little more than half a century after the importation of slaves into the United States had been prohibited by Congress, and at a time when it was treated as piracy by civilized nations, especially by Great Britain and this country. During this period, however, numbers of vessels were engaged illegally in the African slave trade, frequently crossing the Atlantic from the shores of some of our enterprising maritime states, to obtain cargoes from the African coast, at the risk of seizure and confiscation of the vessels so engaged by men-of-war of the governments seeking to prevent it, and the subsequent punishment of the owners and crews. Some of these slave ships were captured, others eluded the vigilance of the watch-dogs of the sea, and having obtained their cargoes, would steer for some friendly port. As our navy became more vigilant in its lookout for vessels laden with slaves, Brazil seems to have been the slavers' destination, during the latter years at least of this period, as perhaps involving less risk, and at the same time affording a demand for slave labor; so while the middle passage would receive during the voyage the body of many a poor wretch stifled by the foul air of the hold, after being nearly starved by bad and insufficient food, yet those surviving would bring a price that would more than repay the traffickers from a solely monetary standpoint.

The career of the little *Wanderer* was somewhat unique. First a pleasure yacht of the fleet of the New York Yacht Club, it was later transformed and sent on its unlawful errand by one or more prominent citizens of the South, disembarked its cargo on the coast of Georgia, and was promptly seized by representatives of the United States Government, but not before the negroes had been scattered and most of them sold.

It may be added that the prosecution of some of the offenders was promptly undertaken, conducted on behalf of the Government by Assistant Attorney-General Henry R. Jackson, who later became a Brigadier-General in the Confederate Army, and some years after the Civil War served as Minister to Mexico. In the prosecution he was assisted by District Attorney Joseph Ganahl, an able lawyer and fearless in the discharge of his duties. General Jackson sought from those in power at Washington at the time to have conducted a general investigation of the slave trade as carried on by citizens of the United States, so that prosecutions might be begun against all the lawbreakers wherever found. The trial of the *Wanderer* case resulted in the confiscation of the yacht, but not in the punishment of the owner or the crew.

Returning to the negroes themselves, the question suggests itself, From what part of Africa did they come, and what tribes did they represent? It is known that the cargo was obtained near the mouth of the Congo, but they must have been collected there from different tribes living in different parts of the continent. It is said that some could not understand the language of other negroes in the group. Their complexion, and to some extent their physiognomy and their size, varied considerably.

It would be interesting to know if some came from the tribes visited by Livingstone and mentioned in the account of his famous journey through South Africa, which he made only a few years before the *Wanderer* brought its load of savages from the coast of their native land. Some of these very individuals may have come out of their straw houses to see and converse with this scientific explorer.

Finally, how many survivors of that memorable voyage across the Atlantic yet remain after forty-seven years in a foreign land and

SURVIVORS OF THE SLAVE YACHT "WANDERER"

a, Zow Uncola (Tom Johnson). *b*, Manchuella (Katie Noble). *c*, Mabiala (Uster Williams). *d*, Lucy Lanham.

forty years of freedom, and in what respect, if any, do they differ from other negroes in this country?

They were first landed on the southern end of Jekyl island, Georgia, but it was soon learned that they would have to be disposed of promptly to prevent confiscation, owing to the activity of the United States officials. Some were sent to Florida quietly, taken up St Johns river, and sold. How many of these or of those disposed of on the coast of Georgia and Carolina, or who were sent to states farther west, still survive, I can not say. About one hundred and seventy were sent up the Savannah in the steamboat *Augusta* and landed on the plantation of a relative of the owner, or principal owner, of the *Wanderer*, who was to assist in disposing of them. The point where they were taken from the steamboat was about two miles below Augusta, Georgia, on the Carolina side of the river. Some of these were sent off as far as Mississippi, others were sold in the neighborhood, and a few of the latter are now living within a radius of from two to thirty miles from the point where they disembarked from the steamboat. Reference to some of these may prove of interest.

One whose photograph is here presented (pl. XL, *a*) was known in Africa as Zow Uncola, but is now generally known as Tom Johnson. He says he came from the coast of Africa where the sun rises, that is, the eastern coast, which if true indicates that he was probably sold from one trader to another across the continent. Said he, "Where I come from, you can see the water just drippin' out o' the sun." The topography of the land is level; he recalls an absence of trees, and is familiar with his native language, though he can not always recall the words corresponding to some he hears in this country. He now lives in Aiken county, South Carolina, and when asked if he would like to go back, said, "I'm gittin' so old, I'm 'fraid I couldn't git back."

Another (pl. XL, *b*), whose African name was Manchuella, subsequently became Katie Noble. She says she came "from deep in Africa," and apparently can give no more definite idea as to her old home, though she was practically grown when she came. Replying to the question as to her age on arrival, she said she had an heir, meaning a child. Her present home is in Edgefield county, South Carolina.

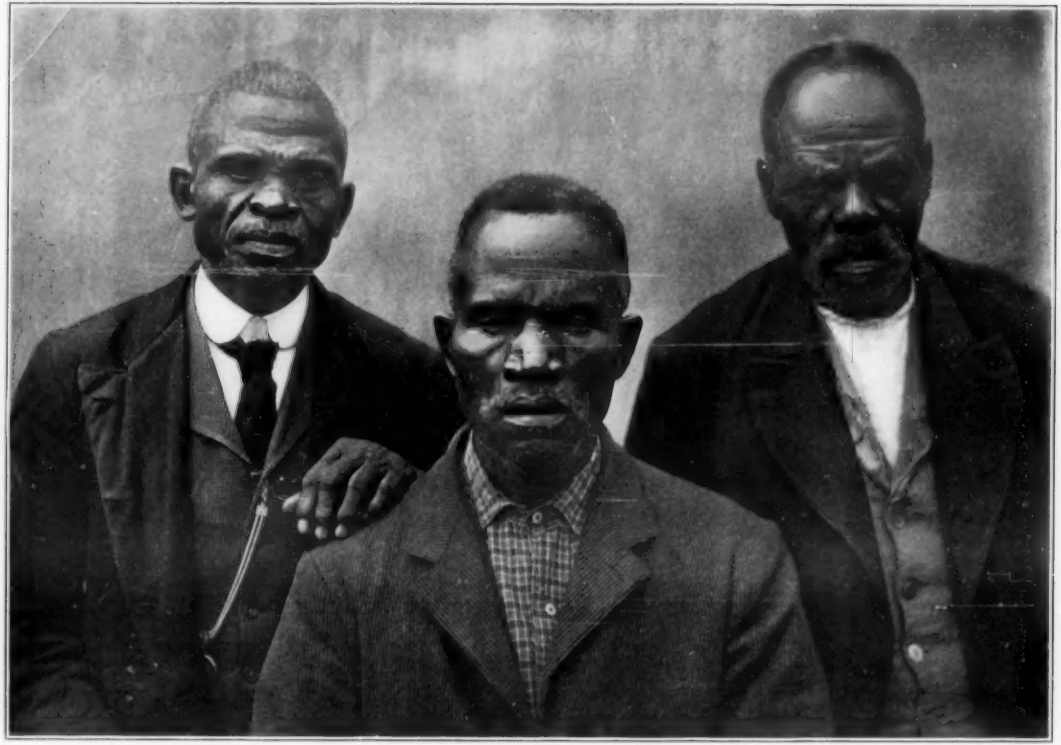
The third whose picture is shown in the same plate (*c*) was called Mabiala, now Uster Williams. His present condition is peculiarly sad. Almost blind, and with little mind left, thinking he has had a "spell" put on him by "witchycraft," he seems to think that someone is going to kill him; yet he retains his memory of African words and customs in a remarkable degree. He says he came from near the "Bēzy" river in Africa. He is now an inmate of the Richmond County Home, near Augusta, Georgia.

Lucy Lanham, the youngest of the lot (*d*), was a small child when she reached this country, too young to remember much of her native language or of the land whence she came. Her present home is in Edgefield county, South Carolina.

The three whose pictures were taken together (pl. XLI) are, from left to right, Cilucāngy, or Ward Lee; Pucka Geata, or Tucker Henderson; and Tahro, or Romeo. The first name in each case is his African designation. These three, as well as Mabiala and Manchuella, above mentioned, probably, if not certainly, belonged to the same tribe or to closely related tribes. The name of the chief was Mfŏtila, and their home was in a mountainous country beyond the Congo. The name of the village where Cilucāngy, or Ward Lee, lived was called Cowāny, while Tahro's or Romeo's home was Kuluwāka, both far from the coast. Ward's mother lived at Colombāndy. Tahro was grown when he came, and is probably the oldest of those whose pictures are given except the old woman, Manchuella. Tahro and Cilucāngy seem to speak fluently their native language, and remember much of the life in Africa. The former, in giving a reason why none of them knew his age, said that in Africa there are only five months in the year. Of these three, Pucka is living in Augusta, Georgia, the other two in Edgefield county, South Carolina.

There are a number of others living within a radius of a few miles, but no two in the same place, so far as I can learn, except Manchuella, or Katie Noble, and Lucy Lanham, who live on the plantation of United States Senator Tillman of South Carolina.

From some of the survivors in this vicinity I have been able to gather certain information which seems to have been retained in their memories with more or less distinctness.



SURVIVORS OF THE SLAVE YACHT "WANDERER"

Cilucăngy (Ward Lee.) Pucka Geata (Tucker Henderson) Tahro (Romeo)

Polygamy seems to have been universal, and while no minister, priest, or civil officer performed the marriage ceremony, there was nevertheless a gathering of the tribe at which the man publicly acknowledged that he took the woman for his wife (though he might already have taken others, which he had no idea of deserting); and any trespassing from the outside meant death to the intruder.

Slavery appears to have been a recognized institution. Apart from the capture of slaves as prizes of war, which was so common in parts of Africa, it was also customary for a relative, not necessarily a parent, sometimes an uncle, who was in need of worldly goods, to pawn a child, and if not able to redeem him at the end of a given time, the child became the property of the person to whom he was pawned, who might then either keep him to work or sell him as he chose. Some of the subjects of this sketch were first made slaves in this way, long before they ever saw a white man; while some as children were kidnapped in the woods by other negroes and sold and resold several times before finally purchased by white traders.

The houses these savages inhabited were made of straw, and were without chimneys. A straw house built by one of them like the one he occupied in Africa is shown in plates XLII, XLIII. The houses were without chairs, stools, benches, or tables.

Some of the domestic animals were evidently familiar to them, though horses and cows were known only by name; indeed one of these Africans, Pucka, stated that he never saw a cow until he came to America. Agriculture was practised to a limited extent, such as raising peanuts (*goobas*) and corn (*mässä*). And they made bread from *madĕoka*, which is doubtless the same as manioc.

Their costume consisted of a piece of cloth, called *nlilly*, around the waist for the men, and the women in addition had something in the way of a cloth or the skin of an animal thrown over the shoulders.

They appear to have had a distinct idea of a supreme being, whom they called *Sûmnia Pûnka*, though they had no idea of prayer or worship, and were never known to curse.

Disputes between members of the tribe seem to have been referred to the chief in the presence of the other members, certain

ones acting as attorneys conducting the prosecution and defence. Where anyone was convicted of a capital crime, he was publicly beheaded, and his head stuck on a pole and displayed to serve as a warning to others.

A few words and an occasional sentence uttered by these Africans in their native tongue — remnants of a language cherished in memory after so many years of practical disuse — will here be given. It may be noted that occasionally a single word has two or more distinct meanings; in other instances two or more words express practically the same meaning. The language or the dialect of distinct tribes differed to a greater or less extent. The following are selections from the vocabulary of the subjects of this sketch:

alligator	*ngändo*	clouds	*mä tûte*
baby	*mauna*	coon	*bungee*
back	*nèma*	corn	*mässä; massängo*[3]
banana	*bitèba*[1]	coconut	*lombo*
beads	*nzeembo*	cow	*gomby*
bear	*nzow*	dance	*zaccomma*
beard	*njävo*	dead	*fuèdy*
belly	*vomo*	deer	*päccäsä; mibûngä*[4]
bench[2]		devil	*doky*
bird	*noonä*	dirt	*ntoto*
boat	*coombay*	doctor	*gängä*
boy	*mauna tucka*	dog	*boa*[5]
bread	*dimpa*	ear	*kootoo*
butterbeans	*mongongo*	eyes	*mäso*
butterfly	*lümpüngo*	fire	*bäzo; tuvia*[6]
cat	*boomba; mboomba*	fish	*golla*[7]
chickens	*sûsû*	fly	*pèssè*
cities	*mbämbä*	foot	*tämby*
cloth	*nlilly*	fox	*coomba*

[1] This is the kind of banana we have in this country, while *maconda* is a similar fruit, but much larger.

[2] There is no strict equivalent of bench, as these Africans knew nothing of either benches or chairs, but their nearest idea to this word is expressed by *cando*, or *conda*, which was the skin of an animal spread on the ground as a seat.

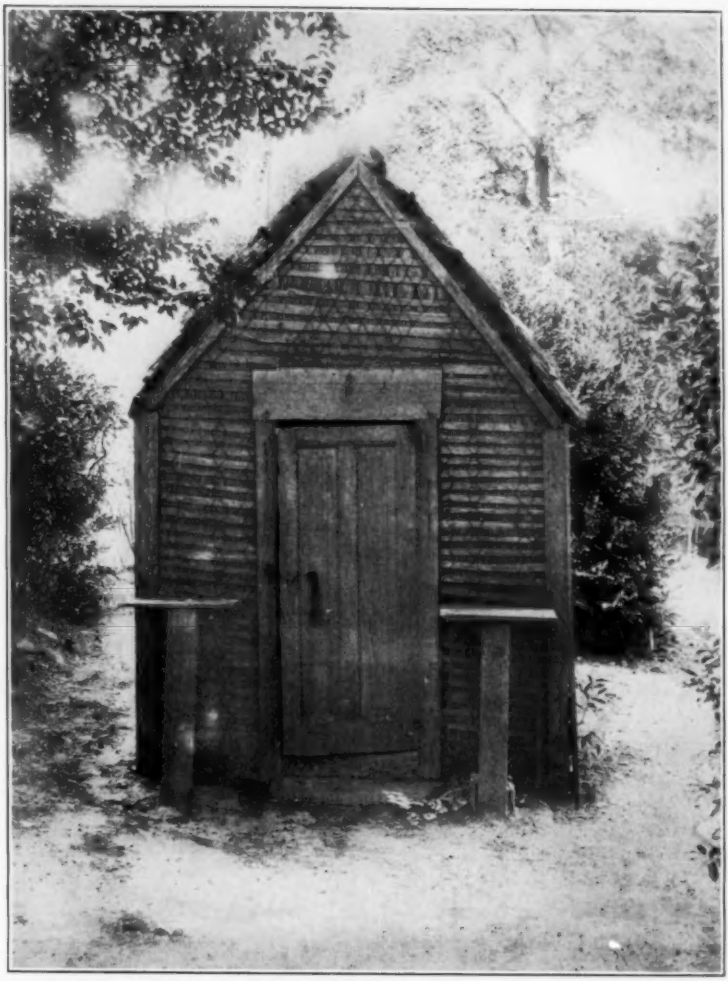
[3] The latter term is used more by those living farther south, while *muendä* is more familiar to those coming from the eastern coast.

[4] There seems to be lack of agreement respecting this word.

[5] *Zeembänga*, having the same meaning, seems to have been brought from the east.

[6] The latter perhaps more common.

[7] Or *tsängo*, while *zimbèzy* we get from the east.



THE HOUSE THAT ROMEO BUILT—FRONT VIEW

give me	*kälä*	pipe	*tordia*
gun	*cully*	pot	*cänzo*
hair	*sûky ; trûky*	rabbit	*loomba*
hand	*corko*	rain	*mvoola*
head	*ntu*	rock	*matäde*
hoe	*sengo*	sense	*gängu*
hog	*gooloo*	sheep	*mamämy*
horse	*välo*	shoulder	*vämbo*
house	*dro ; nzo ; bindû*	sky	*zûlû*
knife	*mbälä*	snakes	*nëoka*
land	*nte ; nsetu*	spider	*sembe*
lie	*gänge*	squirrel	*gemo ; conka*
love	*zola*	stars	*birtity*
man (young)	*tucka ; mayûc'kala*	steel	*wëër*
man (white)	*mondelly*	sun	*längo ; muäny*
man (colored)	*feala*	sweet potatoes	*bällä ; zeembala*
meat	*zimbëzy*[1]	teeth	*mäno*
money	*nzeembo*[2]	tobacco	*soonga*
monkey	*cäwah*	water	*längo ; mäza*
moon	*gonda*	watermelon	*malengy*
partridges	*goomba ; kimbimbe*	whiskey	*mälävo*[4]
peach	*ncëpho*	women	*cänto*
peanuts	*gooba* [*drängay*[3]	women (old)	*bauba*
peas	*madäza ; zängy ;*	women (young)	*ndoomba*

The following sentences are selected from their native speech:

Ukola? How do you do?

Quer quenda? Where are you going?

Pahnam bëzy. Give me some meat.

Wënda twäs mona kona këämvo. Carry me across the river.

Vo vonda ngondo. Kill that alligator.

Shëka. Shoot him.

Borkäla. Call him.

Weeza. Come here.

Zola änä äku? Do you love your children?

Inga (or *yinga*). Yes.

Gogomby. No (or, Go away).

Yälä käyala. He is very sick.

Wënda bäkä gänga. Go bring the doctor.

Fuëdy. He is dead.

Ä cänto änä yäku? How many wives have you?

Kûtatû. Three.

[1] This word, from the eastern coast, is the same as that for fish, this perhaps being their chief animal food.

[2] This is the term for beads, these having been their only medium of exchange.

[3] These are different kinds of peas, while *zin'cäsa* comes from the eastern coast.

[4] This was made from what they called the "whiskey tree," or in their language *myä'*, doubtless the palm-oil tree referred to by Livingstone.

Ungāya muānā ngo? Have you seen any lions?

Noka kûnoka. It is going to rain.

Wenda bängä tēvia Go build a fire.

Muāny yäma. The sun is hot.

Ungā gwäku wōnä yäku ungāyi? Are you living with your mother?

Yälä? Where pains you?

Ntu bwänga. My head aches.

Nzäla. I am hungry.

Mäno gänzē. My tooth aches.

Ruäkä mbälä. I cut him with a knife.

A kway tukiddy? How far away does he live?

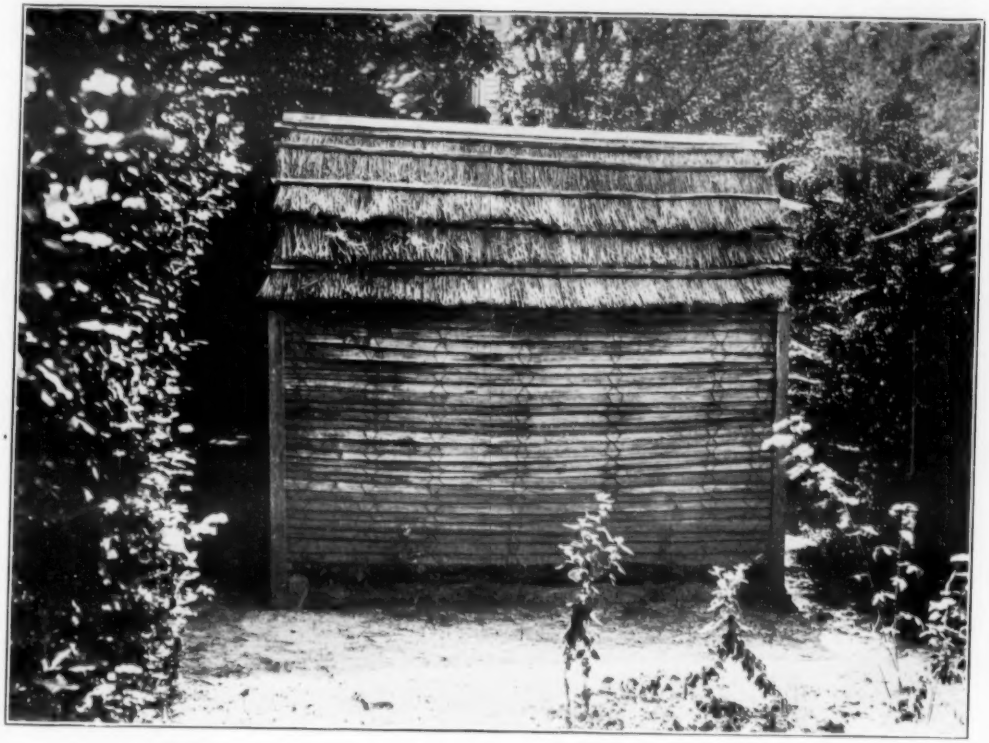
Wûta Coonawany. I was born in Coonawany.

Mäzo mäzēma. He is blind.

We will next note their terms corresponding to some of our numbers:

1, *corsē.*
2, *corla.*
3, *kootätoo.*
4, *kooyä.*
5, *kootäno.*
6, *koosambäno.*
7, *tambwody.*
8, *nänä.*
9, *ĕvwä.*
10, *koomē.*
11, *koomē emorsē.*
12, *koomē enzolē.*
13, *koomē entätē.*
14, *koomē ĕyä'.*
15, *koomē entäno.*
16, *koomē ensämbäno.*
17, *koomē ensämbody.*
18, *koomē ĕnänä.*
19, *koomē ĕvwä.*
20, *makamorly.*
21, *makamorly enwäno.*
22, *makamorly ĕzoly.*
23, *makamorly etätoo.*
24, *makamorly eyä'.*
25, *makamorly etäno.*
26, *makamorly esämbäno.*
27, *makamorly ensämbody.*
28, *makamorly enänä.*
29, *makamorly ĕvwä.*
30, *makomatätoo.*
40, *makomäyä.*
50, *makomatäno.*
60, *makomäsämbäno.*
70, *lusämbody.*
80, *luovwä.*
90, *lunänä.*
100, *kämä.*

It is not pretended that the above few words and sentences are sufficient to give any adequate idea of the native language of these Africans, or that the words given are invariably correct. They have been verified so far as is possible by independent interviews and conversation with different members of the party who came over at the same time. After so many years in a strange land and speaking a strange tongue, it would be remarkable if some confusion of terms did not occasionally occur. It may be recalled that Livingstone, after about fifteen years' residence at a mission station, where he spoke some English and some African dialect, traveled through central South Africa to a point on the western coast somewhat south of the mouth of the Congo, thence across to the eastern coast, hearing no English spoken for three years and a half, with possibly a brief exception while on the western coast; and when finally after



SIDE VIEW OF ROMEO'S HOUSE

this length of time he boarded an English vessel, he stated that he felt at home in everything except his mother tongue: that while he understood it when spoken to, the words would not readily come to him when he wished to speak. If such was the experience of an educated white man after so few years' disuse of his mother tongue, it is remarkable that these Africans, after so many years in this country, having but few opportunities to converse with one another, should remember as much as they do of their native language. And it is only just to say that the little of their language here given has been obtained in a comparatively few brief interviews. Doubtless much more could be procured under more favorable conditions. In fact some of the negroes seem to converse fluently with one another in their native dialect when they meet.

An idea of the general physiognomy of a few is shown in the accompanying photographs. As to color, it is a more or less popular belief in this country that all pure-blood Africans are black, and that when any lighter tint is present it is due to a greater or less admixture of Caucasian blood. This is doubtless commonly the case in America, where the effects of miscegenation are so apparent. But I have been told by the son of a planter in Florida who bought nine of the negroes of the *Wanderer*, paying $6,300 for them, that only three of the number were black, six being of gingerbread color. While the admixture of white blood must have taken place and must still take place to some extent in certain portions of the Dark Continent, the effect being seen in the Griquas of South Africa, yet no less an authority and close observer than Livingstone frequently noted what he called the "coffee and milk" color in certain tribes of the interior which had not, in the memory of any one living, come in contact with whites or had seen much of them; while those on the coast and along the rivers were usually black, or at least very dark, and the lighter tint was so prized among the interior tribes as a mark of beauty that the women would take certain medicinal substances in the hope that it would produce this shade in their offspring.

From what I have seen of the negroes of the *Wanderer* and have heard of others, I am convinced that some of them were not nearly so black as some negroes born in this country, while others were,

the complexion varying from black to dark brown, depending perhaps on the tribe to which they belonged, though variations occurred to some extent among the different members of the same tribe. A considerable number of them had followed their custom of filing the teeth, and so sharp were they, and so powerful the jaws, according to white men who knew these Africans when they were young as well as some of the people themselves, that some of them could perform such remarkable feats as biting off the heads of tenpenny nails or biting out the rim of a tin bucket! Some, if not all, had been branded in Africa with a hot iron on the chest, the resulting scar being faintly visible in the survivors to-day.

On arrival in this country many were suffering from various physical ailments, some of which were the natural result of the voyage. Intestinal affections, skin diseases, and to some extent scurvy seem to have been prevalent among them, the last named especially being doubtless due to the character of the diet on their ocean voyage. An indication of their eagerness for vegetable food is shown by an incident related of those sent by steamboat up the Savannah river. They landed near a field of growing corn, the ears of which must have been far from tender, as it was late in the season. The savages promptly began to pluck the ears and eat them raw, leaving little or none to be gathered later.

For a considerable time it was difficult to make them wear clothing, though if red flannel were given them, they would wear that more readily than anything else. This neglect to keep themselves properly clothed resulted in many contracting pneumonia in winter. In summer, clothing was still more distasteful to them. An incident is related where nine of them were picking peas with other negroes in Florida on a hot day. Suddenly with one accord the Africans quickly rid themselves of this unnecessary encumbrance, and proceeded *in puri naturalibus* with their work, unprotected from the rays of the sun or the gaze of their fellow-laborers. But after a process of elimination of the less fit individuals by natural selection, the others gradually became in their customs more like the other negroes with whom they associated.

It was noticed by their owners that, when they first came, the Africans would not steal or pilfer as so many other negroes did,

presumably owing to the severity of their native customs in dealing with theft. They soon learned, however, that in a limited degree stealing could be done here without fear of severe punishment.

Some of them thought it unreasonable of their white owners to require the discontinuance of polygyny.

Some reports represent the Africans to have been good laborers, others that they were of little service; doubtless some were strong and some not. All of them, so far as I have seen, speak kindly if not affectionately of their white masters in this country.

It is noteworthy that after forty years of freedom some would like to return to the old country and the old life. Cilucăngy, or Ward Lee, has had circulars printed for distribution, which read as follows:

TRENTON, S. C., *Sept. 14, 1904.*

"*To The Public:*

"Please help me. In 1859 I was brought to this country when I was a child. I cannot say just what age I was then but I have been aroused by the spirit — and I trust it was the spirit of God — on last May. One year ago it was revealed to me to go home back to Africa and I have been praying to know if it was God's will and the more I pray the more it presses on me to go and now I am trying to get ready if God be with me to go back to Africa soon as I can get off to go. And now I beg every one who will please help me. I will be glad of whatever you will give me. I have been trying to make some arrangements to go ever since it was revealed to me to go. I am bound for my old home if God be with me white or black yellow or the red I am an old African.

"Yours truly,

"WARD LEE."

AUGUSTA, GEORGIA.

NOTE BY FREDERICK STARR

Dr Montgomery believes that Zow Uncola came from the east coast of Africa. The other five — Manchuella, Mabiala, Cilucăngy, Pucka Zeata, and Tahro — he thinks came from one district, "near the *Bezy* river" according to Mabiala. Is it possible to locate this region? I am not sufficiently acquainted with African languages to answer the question offhand. Some words in Dr Montgomery's list are at once recognizable, as *mauna* (*mwana*), *găngă*, and *mvoola*. They are the same in perhaps all Bantu tongues. We have made a comparison between nineteen simple words from his list and words of the same significance from four great languages of the Congo Free State. The languages were selected to rep-

resent the four great areas into which that country is naturally divided — the Lower Congo, the Middle Congo, the Upper Congo, and the Kasai. The languages were the (Ba-)Kongo, Bobangi, Swahili, and (Ba-)Luba. While there were some agreements in all the lists, there was but one list which strikingly resembled Dr Montgomery's. This was the (Ba-)Kongo, spoken throughout the lower Congo region, from the coast to the head of the Cataracts, at Leopoldville. The closeness of the resemblance is at once evident. Thus:

English	Afro-American	(Ba-)Kongo	English	Afro-American	(Ba-)Kongo
baby	*mauna*	*mwana*	rocks	*matãde*	*matadi*
banana	*bitẽba*	*tiba*	sun	*tãngo*	*ntangwa*
bread	*dimpa*	*ndiba*	water	*mãza*	*maza*
cassava	*madeoka*	*edioka*	white man	*mondelly*	*mundele*
cloth	*nlilly*	*nlele*	one	*corsẽ*	*koxi*
crocodile	*ngãndo*	*ngandu*	two	*corla*	*-ole*
dance	*zaccomma*	*ekinu*	three	*kootãtoo*	*-tatu*
dead	*fuedy*	*fwa*	four	*kooyã*	*-ya*
doctor	*gãnyã*	*nganga*	five	*kootãno*	*-tanu*
fire	*tuvia*	*tiya* (= *tuvia*)	six	*koosambãno*	*-sambanu*
maize	*mãssã*	*masa*	seven	*tambwody*	*nsambwadi*
moon	*gonda*	*ngondɛ*	eight	*nãnã*	*nana*
peanuts	*gooba*	*nguba*	nine	*evwã*	*evwa*
plantains	*maconda*	*mankondo*	ten	*koomẽ*	*-kumi*
rain	*mvoola*	*mvula*			

This really is identity. The Africans in this country have dropped initial *m* and *n* before another consonant in some cases. These combinations are so strange and foreign to English speech that the omission causes no surprise. Apparent variations are *dimpa* = *ndiba*, which is slight, and *ekinu* for *zaccomma*. *Ekinu* is the name of a special kind of dance, and there are other names for other kinds. I do not find one that resembles *zaccomma*. There is a verb *sakumuka*, which refers to the growth of plants usually, but which is capable of the translations "to spring out of the ground," "to spring up." I do not assert a relationship between these. The Kongo words here given are taken without change from Dr Bentley's Dictionary.

We can assert without hesitation that these five negroes came from the lower Congo area, between the Atlantic coast and Leopoldville. To Katie Noble (Manchuella) this seems "deep in Africa"; to the geographer, it is at the fringe of the continent. Four place-names are given by Dr Montgomery's blacks — the *Bezi* river and the towns *Cowany*, *Colombandy*, and *Kuluwaka*. These I fail to identify. There is a *Lubuzi* river in the northern part of the District of Boma. *Bezi* may be

Buzi. These slaves may have come from there, but the statement is only a guess. African towns are often named from their chief, and when he dies the name is lost. Villages are often moved from one to another place, for trifling reasons. Town names are constantly disappearing. It is difficult to identify the towns visited by African explorers a few years after their journeys. Failure then to locate these towns need cause no surprise. It is possible, however, that a man like the Rev. John H. Weeks, who has known the lower Congo country for a quarter of a century, might identify them. The name *Mfotila*, given as the chief of one of the towns, is not an uncommon one in the lower Congo. One of that name, *Mfutila*, became ruler of the kingdom of Kongo in 1891. Of the Mfotila here mentioned I know nothing.

UNIVERSITY OF CHICAGO.

FURTHER NOTES ON THE ARCHEOLOGY OF PORTO RICO

By J. WALTER FEWKES

Since the publication of his memoir on the *Aborigines of Porto Rico and Neighboring Islands*[1] the author has received considerable additional data tending to elucidate the meaning of certain archeological material from the Antilles. Among the most significant is a collection of prehistoric objects presented to the Smithsonian Institution by Miss A. B. Gould[2] of Boston, which includes, among other specimens, one of the best stone pestles from the West Indies yet described (by far the best from Porto Rico); two three-pointed stones, a fine mortar with two cavities, a double-bladed ax, and a "semicircular stone" with a face cut in relief on one side.

The author has been able to purchase a few objects from Vieques, a Carib island near Porto Rico, the archeology of which is almost unknown. These specimens, which have been added to the Smithsonian collection, are especially significant owing to the localities in which they were found. In addition to the objects mentioned, he has received from Señor Grullon several photographs of pictographs and instructive specimens preserved in the museum at Santiago de los Caballeros, Republica Dominicana.[3] It is not the intention at this time to do more than to refer to these photographs, since this article deals mainly with Antillean objects added to the Smithsonian collections since the publication of the memoir above cited. While photographs of several instructive objects from Santo Domingo are here reproduced, this account does not touch on all the material in

[1] *Twenty-fifth Annual Report of the Bureau of American Ethnology.*

[2] The author takes this occasion to express his indebtedness to Miss Gould for this and other aid in his Porto Rico studies.

[3] The writer is greatly indebted to his friend Señor Grullon for valuable information and for permission to publish the accompanying photographs of stone objects. It is a pleasure to make this acknowledgment to this zealous student of Antillean antiquities.

possession of the writer,[1] who looks forward to an opportunity to revisit that island and examine the many prehistoric objects there awaiting archeological study.

Accompanying the collection sent by Miss Gould there is a spool-shaped stone object which is believed to be a natural form. This specimen may have been used as a stool or an anvil, or for some other purposes. It measures 7 to 9 in. in diameter by 9 in. in height.

The material considered in this paper is grouped as follows: three-pointed zemis; stone pestle; mortar; semicircular stone disk; ovate stone with three knobs; elbow-stone; clay cylinder; and double-bladed ax.

The most characteristic forms of prehistoric stone objects from Porto Rico are the so-called "stone collars" and "three-pointed stones." It would appear from the character of the latter that they were used for religious purposes, representing different supernatural beings.[2] They are possibly the "stones with three points" which early writers declare were used to increase the productiveness and growth of the *yuca*, a plant from the root of which the food cassava was prepared.

Two fine specimens of three-pointed stones have been presented to the Smithsonian through the kindness of Miss Gould, and the writer has received from Señor Grullon photographs of three others the originals of which are now in the Santiago Museum.

Three-pointed stones have been divided by the author into four types, which radically differ from one another in the modifications of the parts that give them their names. The three points are classified as the anterior, the posterior, and the conoid projections. The base is a flat or slightly concave rough surface extending from anterior to posterior projection, on which the three-pointed stone generally rests when placed in a normal position.

These three-pointed stones are regarded as clan or family idols

[1] Several photographs of pictographs found in Porto Rico and Santo Domingo have been received by the author since his earlier papers were written. These will be considered in a future article.

[2] The author long ago identified these stones as images of supernatural beings called *zemis* (*cemis*). The absence of reference to them in early documents is indicative of their religious or sacred character.

which were kept in houses of caciques, or in caves, and used by the islanders in their worship. Although the true significance, if any, of their differences in form is yet to be discovered, a classification into types is of advantage in their study.

First Type of Three-pointed Zemis. — This type has a rude head carved on the anterior, and equally rude legs cut on the posterior projection. In a classification of this type, three divisions, determined by the shape of the anterior projection, are recognized: (1) with a human head; (2) with a reptilian head; (3) with an avian head. To these may now be added (4) with a mammalian head (other than human).

In his description of a specimen of the first type, now in the British Museum, Mr T. A. Joyce[1] points out that the form of its head shows that it does not belong to any one of the three groups suggested by the author. An examination of Mr Joyce's figure of this specimen and comparison of its anterior projection with the head of a manatee, or sea-cow, leads the author to refer the rare zemi in the British Museum to that animal, the sole known example of a fourth division of the first type that has yet been positively identified.

In the Gould collection sent to the Smithsonian Institution there is a good specimen of three-pointed zemi belonging to the first group of the first type. Although this specimen is not very different in form from others of the same group, already figured, it has one point of special interest, shown in the accompanying illustration (XLIV, 1). On each side of the conoid projection there are two pits or depressions similar to those on other specimens to which attention has been called elsewhere. In some cases these pits occupy the positions of the joints of limbs, and may have once contained fragments of shell or stones. In many of the specimens of three-pointed zemis in which these pits occur, appendages are absent; in others they are carved on the surface of the idol.

This specimen is said to have been found in a cave at Trujillo Alto, Porto Rico. It measures 7½ in. long by 4½ in. high.

Second Type of Three-pointed Zemis. — Specimens of the type in which a face is carved on one side of the conoid projection, or between its apex and the anterior projection, are much less abundant

[1] *Journal of the Royal Anthropological Institute*, XXXVII, pp. 407–408, London, 190

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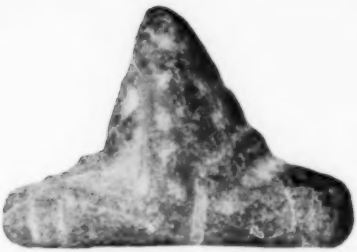

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STONE OBJECTS, PORTO RICO

1, Three-pointed Zemi (First Type). 2, Three-pointed Zemi (Second Type). 3, Pestle. 4, Ball with Knobs. 5, Semicircular Stone.

than those of the first type in Porto Rican collections. Only five zemis of this kind are described in the author's memoir, and the majority of these came from Santo Domingo.[1] There is one additional specimen of the same type in the collection here considered (pl. XLIV, 2), and Señor Grullon has sent the author a photograph of still another, now in the Santiago Museum. These seven known specimens fall logically into two groups: three having limbs carved in relief on the sides, and four without any sign of appendage. One of the three-pointed stones here described belongs to the latter, the other to the former group.

The specimen of the second type, sent by Miss Gould, came from Aguas Buenas, Porto Rico, and according to its label was found in a cave.[2] It is instructive in several particulars, not the least being its geographical locality, indicating that the type is Porto Rican as well as Dominican. The illustration (pl. XLIV, 2) shows that this specimen has legs cut in low relief on the sides of the conoid projection. These appendages rise from the back and extend to the anterior projection where they terminate in feet which are brought together below the mouth. Round depressions, or pits, are found near the position of the joints, and just below the apex of the conoid projection is a small lateral depression. Grooves worn in the base of the conoid projection seem to indicate that the object was lashed to some foreign body. The face of this idol is without nose, while lips and ears, which ordinarily are prominent in the type, are inconspicuous. The tip of the posterior projection is considerably battered, but striæ in the stone at this point would appear to have been intended for feet. The specimen measures 6 in. in length by 4 in. in height.

The author's attention has been called by Señor Grullon to another fine and instructive specimen of this type from Santo Domingo (pl. XLV, *a*, *b*). It resembles that figured in plate XLV, figs. *b*, *b'*, of the author's memoir above cited, but unlike that specimen has

[1] The second type was originally distinguished from the first in the memoir above mentioned. The author has seen no representations of this type in other publications. A similar method of representing joints by incised circles is found in many Central American figures, and in Mexican bas-reliefs.

[2] Miss Gould has kindly furnished a photograph of the exact point in the cave where she was informed this specimen was found.

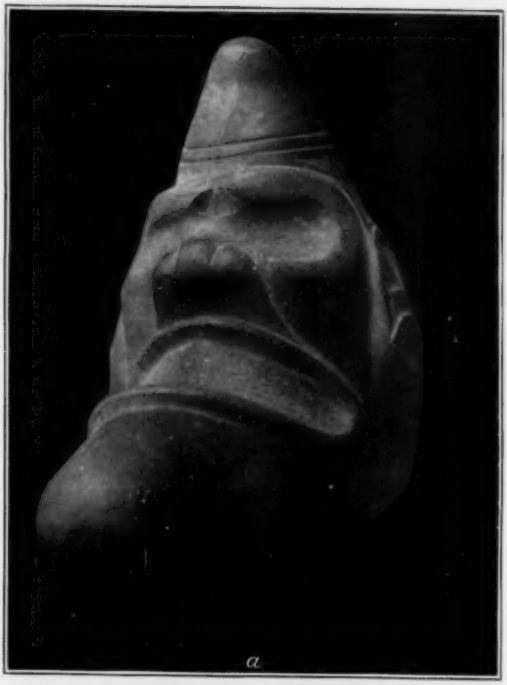
incised scrolls around a circle on the back like the object represented in plate XLVII of the same paper.

Unlike the one last mentioned, this zemi has no indication of legs or other appendage on the side of the conoid projections; but the ears are elaborately cut in relief, the mouth is large, the lips are rather narrow, the eyebrows flattened, and the nose is prominent. The ferule back of the head, which possibly indicates a neckband, is pronounced.

Fourth Type of Three-pointed Zemis. — The fourth type of three-pointed zemis includes all those which are destitute of head on either the anterior projection or the conoid prominence, and have no indication of a face on any part of the object. The specimens of this type vary considerably in general form, most of them having the anterior and posterior projections blunt and rounded, the cone being of limited height. The best figure of this variety can be seen in plate L, *e*, of the author's memoir on the *Aborigines of Porto Rico*. Another subdivision of the type has more pointed anterior and posterior projections, the surface lying between the anterior projection and the apex of the cone being slightly concave, while that portion which extends between the posterior projection and the apex is slightly convex. There are sometimes pronounced lateral ridges that extend from the apex of the cone to the edge of the base.

In the third subdivision of the type, the conoid projection is slender, while in the fourth the cone seems to rise out of a depression surrounded by a slightly elevated lip. The first two subdivisions of this type have been figured elsewhere (*op. cit.*, pl. L); the second two, here distinguished from the others for the first time, have not hitherto been illustrated. They will be considered in turn, beginning with the one last mentioned.

An instructive new form (fig. 134) of three-pointed zemis, to which the author's attention was called by Señor Grullon, is provisionally placed in the fourth subdivision of the fourth type, from which it differs in having an elevated fold or raised ridge enclosing a depression out of which rises the conoid projection. Although the general appearance of this stone has suggested phallicism, the author would not so interpret it. This is the only specimen of this form thus far described.



PHOTOGRAPH BY SR GRULLON

THREE-POINTED ZEMI (SECOND TYPE)

a, Face view. *b*, Lateral view.

Another three-pointed zemi from Santiago has the conoid projection quite slender, more so than that of any other specimen. Its apex tips slightly forward toward the anterior end of the zemi. A photograph of this idol was sent to the author by Señor Grullon. This specimen belongs to the third subdivision of the fourth type.

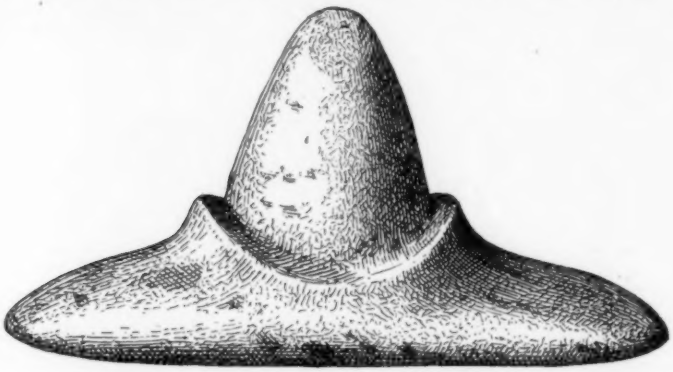


FIG. 134.— Three-pointed Stone of the Fourth Type.

Stone Pestle. — As a rule stone pestles from Porto Rico are inferior in make and decoration to those from Santo Domingo. This inferiority is not true of the specimen here figured, which is one of the finest from the West Indies thus far recorded.

This specimen (pl. XLIV, 3) was presented to the Smithsonian Institution by Señor Don Juan Cabezas, of Carolina, Porto Rico, and according to its label was plowed up near his estate. It is made of a hard, smoothly polished stone, and is the finest specimen of these objects from Porto Rico. It has an elongated, slightly tapering handle, with a well-carved head at one end, and a lens with slightly chipped periphery. The handle is without a ferule, and unfortunately is broken at the neck. The lips, nose, eyes, and ears are well carved in high relief. Each side of an elevation on the crown of the head bears a ring-like protuberance unlike anything in other described pestles from this region. This specimen measures 7½ in. in length.

Señor Grullon has sent to the author several good photographs

of a pestle in the Santiago Museum, decorated on one end with a head, perhaps designed to represent that of a bird, following a known custom in the decoration of pestle handles.

Stone Mortar. — There is a fine mortar (fig. 135) in the collection sent by Miss Gould. This mortar has a concavity on each side, and a distinct groove extending around the body. Of all West Indian mortars seen by the author this is the most interesting and is of most exceptional form.

FIG. 135. — Mortar.

Semicircular Stone Disk. — One of the semicircular stone disks in the Gould collection closely resembles that represented in plate L, *f*, *f'*, of *Aborigines of Porto Rico.* It has a face on one side, and lateral extensions which show indications of grooves as if for lashing to some foreign body. The specimen (pl. XLIV, 5) measures 5½ in. long by 4¼ in. high.

Ovate Stone With Three Knobs. — In his description of West Indian objects the author has figured, from the Imbert collection obtained in Santo Domingo, a stone ball with three rounded knobs situated near one pole (*op. cit.*, p. 175). In the collection sent by Miss Gould there is a stone ball (pl. XLIV, 4) similar to this, but more nearly oval in shape, from Porto Rico, the first specimen of this

form from that island. The signification and use of this object are yet to be determined. Its round end affords no evidence of its use as a pestle. It is about 4 in. in longer and 3 in. in shorter diameter.

Elbow Stone.—A characteristic elbow stone, not elsewhere figured, was sent to the author from Vieques island, near Porto Rico. This

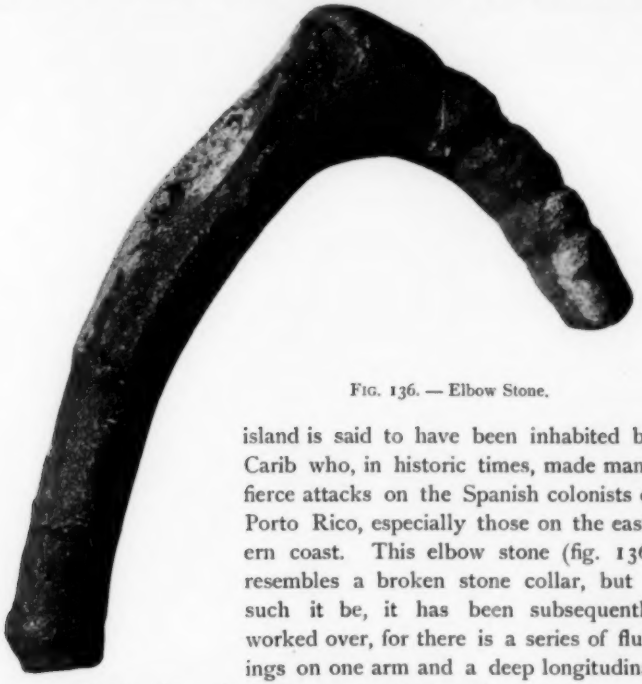


FIG. 136. — Elbow Stone.

island is said to have been inhabited by Carib who, in historic times, made many fierce attacks on the Spanish colonists of Porto Rico, especially those on the eastern coast. This elbow stone (fig. 136) resembles a broken stone collar, but if such it be, it has been subsequently worked over, for there is a series of flutings on one arm and a deep longitudinal groove extends along the fluted arm on the outside.

Miss Gould writes concerning a remarkable elbow stone, lately acquired by Señor D. Vicente Balbas, which has the two ends "approximately of equal length, at right angles, and each hollowed into an almost tubular socket." She suggests that these sockets are for "support by two poles," and it seems to the writer that this is very probably a correct explanation.

Mr Joyce adds a new interest to the discussion of the use of the

Porto Rican "stone collars" by suggesting that they were connected with tree worship, which, as we know from the writings of Ramon Pane and others, was well developed among the Antilleans. According to this theory the collar represents in stone a tree with branches tied together by a band (shoulder band), the prototype of the stone collar thus having been of wood. This ingenious theory has much to commend it, although, like other theories respecting these interesting objects, it awaits definite proof. In this connection the "elbow stone" would be a zemi transitional in form between a collar and a three-pointed stone that originally might have been tied to a wooden object.

FIG. 137. — Clay Cylinder.

It is commonly said that there is no reference in early writings to Porto Rican and Dominican stone collars, but Señor Coll y Toste, a well-known Porto Rican scholar, has called attention[1] to an early mention of "seven collars" owned by the Haitian cacique Caonabo.

Clay Cylinder. — Figure 137 exhibits two views of a clay object of cylindrical form, found at Vieques (?), Porto Rico, related to the so-called cylinder for stamping pottery, contained in the Archbishop Meriño collection from Santo Domingo. It is now in the

[1] *Prehistoria de Puerto Rico*, 1907.

Smithsonian Institution. The knob at each end of the cylinder is separated by a deep groove from the body of the object, on which are represented deep meanders. A section of the body of the cylinder shows that it is not circular, but slightly oval in form. One of the accompanying figures represents the upper or flattened surface; the other, one of the sides. The course of the grooved meander over the surface varies in each of the four quadrants, and in two instances the end of the groove is accompanied by a pit, as shown in the illustration. To this form of ornamentation on pottery attention has been called elsewhere.

Double-bladed Ax. — The majority of the *hachas* (axes) from Porto Rico are pointed at one end and from their form are called "petaloid." The double-bladed ax from Pueblo Viejo, sent to the Smithsonian Institution by Miss Gould, is almost unique in collections of stone implements from our new insular possession in the West Indies. Similar forms have been reported from Santo Domingo and the Lesser Antilles.

BUREAU OF AMERICAN ETHNOLOGY,
WASHINGTON, D. C.

SOME RECENT PALEOLITHIC DISCOVERIES

By GEORGE GRANT MACCURDY

The incoming year will witness the celebration of the fiftieth anniversary of the appearance of Darwin's *Origin of Species*. The celebration in this country began with the Darwin Anniversary Meeting of the American Association for the Advancement of Science during convocation week. Every one is familiar with the uplift Darwin's work gave to science as a whole. Not the least among the beneficent results was the impetus given to the study of anthropology, particularly prehistoric archeology. By a singular coincidence the very year (1859) that the Darwinian theory was published, Prestwich visited the valley of the Somme and satisfied himself of the authenticity of Boucher de Perthes's discoveries in the river drift at Abbeville. It is therefore just fifty years since the first general recognition of paleoliths as artifacts. In visiting some new paleolithic stations during the past summer it occurred to me that this might be a fitting time to speak of certain recent developments in the European field.

One of the most important paleolithic discoveries in recent years is that made by Herr Emil Bächler, Director of the Natural History Museum in St Gallen, Switzerland. The Alpine region had not been considered seriously as a field for paleolithic research, since the latter period closed before the retreat of the glaciers to anything like their present extent. It is true man might have penetrated into the Alps during an interglacial period, but the evidences of his presence would have been destroyed by the succeeding glaciation. Two stations in Switzerland of the Magdalenian epoch have been known for years, viz., Schweizersbild and Kesslerloch, but these are north of the Rhine in Canton Schaffhausen.

It remained for Herr Bächler to make the discovery, some four years ago, of a station of Mousterian age; not in a valley, or even the foot-hills, but in the Säntis mountains which lie between the lakes of Constance and Zürich.

The station in question is on the Ebenalp (above Appenzell) at a height of 1477 to 1500 meters. It consists of two caverns, with southeastern exposure, that enter the precipitous face of the rock, and one of which penetrates backward and upward, giving access to the top of the mountain as well as to the Weissbach valley lying to the northwest. The caverns are reached by foot-path from Weissbad, the most frequented one being by way of the gap that separates the Bommenalp from the Ebenalp. This gap was produced by faulting which left the Ebenalp standing about 300 meters above its neighbor. The last part of the way is very steep but protected by a railing. It would, in fact, be absolutely broken at one point were it not for a wooden bridge anchored to the vertical face of the

FIG. 138. — Entrance to the Lower Cavern of Wildkirchli, Canton Appenzell, a Station of Mousterian Age at a Height of 1477 Meters.

rock. This is at a point just below the first or lower cavern. It is probable therefore that paleolithic man did not reach the caverns from this side, but rather from the back of the mountain and by way of the upper cavern. The communication between the two is by means of a narrow ledge. (See fig. 138.)

These caverns have been known since 1621, and there is a legend to the effect that at a much earlier date they were inhabited by wild men. The little pilgrimage chapel of Wildkirchli that gives its name to the place was founded by Dr Paulus Ulmann (1613–1680), priest at Appenzell. The chapel is in the lower cavern, and in the upper cavern where the hermit house once stood there is now the Wildkirchli Inn. The last hermit died in 1851, since which time Wildkirchli has been rather a *belvedere* for mountain climbers than a place of religious pilgrimage. The views are certainly superb and well repay the toilsome ascent. A place so full of the spirit of the past and of natural charms could not well escape the romancer, as witness the last chapters of the historical novel, *Ekkehard*, by the celebrated German writer, Viktor von Scheffel.

As early as 1861 Rütimeyer announced the presence of bones of *Ursus spelæus* and *Capra* (*ibex* and *rupicapra*) in the floor deposits of Wildkirchli. Before that date the hermits used to pick up bones of the cave bear and sell them to the pilgrims. Bächler began his researches which led to the discovery of a pure Mousterian industry during the winter of 1903–04, and continued them during the two following winters. Winter is the best time to work, as the caverns are then dry, relatively warm, and free from visitors.

The deposits are about five meters thick and cover an area of several hundred square meters, so that the amount still to be excavated is much greater than that already done. About 99 per cent of the bones found are of the cave bear, the number of individuals represented by the finds to date being approximately 200. These remains have been found practically at all levels save in the layer at the top which has a thickness of one-half meter. Mousterian implements are found in the same horizons as the faunal remains. They are made of quartzite and flint; also of cave-bear bone. The quartzites were picked up in the Weissbach valley several hundred meters below and carried to the caverns there to be worked into

tools. Some of the better formed implements are made of a greenish flint that must have been brought a long distance by paleolithic man. Both stone and bone implements are of crude workmanship.

In company with Herr Bächler, I spent some hours studying the sections and searching for animal remains and artifacts. We were successful in finding two bone implements and one chipped quartzite. Teeth and fragments of bones were counted by the dozen. These were chiefly of the cave bear. Remains of the cave lion, the cave panther, badger, marten (*Mustela martes*), ibex, chamois, stag, marmot, otter, and hermit crow have been noted.

The deposits are not indurated and may be worked with as much rapidity as is consistent with careful observation. They consist of materials that have fallen from the ceilings. They cannot be called stratified, and yet more or less definite horizons may be distinguished on account of the relative fineness of the deposits and the variations in color.

What is the age of the industry-bearing deposits of Wildkirchli? In order to arrive at a just estimate one must have a knowledge not only of prehistoric times but also of the Ice Age. According to Penck there were four glacial epochs (with alternating interglacial epochs). These have been named after four streams of southern Germany in the foothills of the Alps: Günz, Mindel, Riss, and Würm glacial epochs respectively, beginning with the oldest. Penck has gone even further and determined three well-defined stages in the final retreat of the Würm glaciation. The stages correspond to temporary advances during the period of retreat. Such stages have left their traces so distinctly in the region about Innsbruck that local names have been applied to them: Bühl, from Kirchbühl at an elevation of 500 meters; Gschnitz at 1200 meters, and Daun at 1600 meters, the latter of course being the most recent.

The barbaric races with which the Romans had to contend had a knowledge of iron. It is estimated that the Bronze Age had its beginning some 3500 years ago. The Alps were then either inhabited or visited throughout their extent by man. We find, for example, bronze weapons in the Flüela pass of the Upper Engadine. The Flüela pass was invaded by ice of the Daun stage. The latter, therefore, antedates the Bronze Age. Prehistoric copper mines have

been discovered at two localities in the Austrian Alps. One of these lies at the southern foot of the Übergossene Alp, near Salzburg, at a height of 1500 meters. Neolithic implements were found in the old shafts. Now this locality (Mitterberg) is near the timber-line, and a slight depression of this would render it difficult to establish smelters there. The other copper mine is southeast of Kitzbühel in the Tyrol, at a height of 1900 meters. This mine also must have been occupied later than the Daun stage, at which time the region lay very near the snow-line and was uninhabitable.

Even the whole neolithic period in Switzerland is younger than the Daun stage, whose snow-line lay 300 meters lower than to-day. The minimum time, therefore, that separates us from the Daun stage must be at least 7000 years.

A very long interval of time separates us from the closing epoch (Magdalenian) of the paleolithic period. For we find on the borders of Lakes Constance and Geneva animal remains of the Magdalenian epoch in terraces that are 20 to 30 meters above the present level of these lakes. Magdalenian industry is found in Switzerland well within the area covered by the Würm glaciation. But such stations have not yet been found within that covered by the Bühl stage. It may be taken for granted, therefore, that the Magdalenian industry is older than, or at least contemporaneous with, the Bühl stage, which corresponds, by the way, to the Champlain stage in North America.

The rock shelter of Schweizersbild was occupied by paleolithic man after the Würm glaciation had retreated across the Rhine from Canton Schaffhausen. Here 25,000 stone implements have been found; also many bone implements and some engravings, one being of the mammoth. The paleolithic layers were covered in turn by successive deposits belonging to the neolithic bronze and Roman periods. Taking the thickness of the deposit left since Roman times as representing 2000 years, the time required for the whole series of deposits is estimated at 24,000 years. The total time elapsed since the maximum advance of the Würm glaciation is still longer, 30,000 years being none too high an estimate for it.

When could Wildkirchli have been inhabited? It lies within the region of glaciation. It could not have been occupied during

the Würm glacial period, because it is at a height of 1500 meters, while the snow-line of the Würm glaciation was only 1200 meters. It is self-evident that man could not have taken up his abode above the snow-line. Even during the Bühl stage of the glacial retreat the snow-line was still as low as 1500 meters. Man could have come there only after the Bühl stage. But after the Bühl stage we have a different fauna and flora; so that man must have inhabited Wildkirchli before the last (Würm) glacial epoch, that is to say during an interglacial (Riss-Würm) epoch with climatic conditions similar to those of the present day.

During the last glacial epoch the Wildkirchli caverns were filled with ice or snow and hence no deposits of any kind were formed. The sterile layer one-half meter thick at the top of the floor deposits represents the accumulation since the close of the glacial period. If we allow 30,000 years for post-Würmian times we must allow as much more for the last glacial epoch. Thus to reach the Riss-Würm interglacial period and man's occupancy of Wildkirchli caverns would mean going back about 100,000 years. We have here an atypic but pure Mousterian industry, which probably marks the close of the period; for it seems that in France, far removed from the Alps, the Mousterian industry was contemporaneous with a glacial epoch (the Riss) and is therefore much older than that at Wildkirchli.

Fortunately for the science of prehistoric archeology we know now what manner of man was the author of the Mousterian industry. The first discovery that attracted widespread attention to the physical characters of fossil man was that made in 1856 in the valley of the Neander near Düsseldorf, Germany. The circumstances of the find were such as to render it difficult to establish the age of the human remains. That the skull belonged to a type more primitive than any hitherto known was evident from the start to an unprejudiced mind. Corroborative evidence came just ten years later when Dupont found a human lower jaw in the cavern of La Naulette, Belgium, associated with bones of the mammoth and the rhinoceros. The discovery in 1886 of parts of two human skeletons in the cavern of Spy, near Namur, Belgium, furnished still better evidence, as the human remains were accompanied not only with

bones of the mammoth and cave bear but also with stone implements of the Mousterian type. As belonging to the same class there should be mentioned Professor Gorjanovič-Kramberger's discovery in 1899 of human bones, artifacts, and fossil animal remains at Krapina, near Agram, the capital of Croatia.

During the summer of 1908, Herr O. Hauser found part of a human skeleton, including the skull, in the classic station of Le Moustier itself. This station, belonging to a wonderful series of paleolithic sites in the valley of Vézère, France, has been known since the explorations of Lartet and Christy, 1863–65. Hauser very wisely delayed the removal of the human remains from the cavern of Le Moustier until after the arrival of a party of German anthropologists, including Professor Klaatsch of Breslau, the party going direct from the German Anthropological Congress held at Frankfurt during the first week in August.

FIG. 139. — *Homo primigenius*, or *mousteriensis*, from the Classic Cavern of Le Moustier (Dordogne). *Norma Facialis.*

Hauser's discovery was made in the lower cave at Le Moustier, and includes not only an almost complete skull (figs. 139, 140) but also various parts of the skeleton of a youth of about fifteen years. At this age, sex cannot be determined from the bones alone. The race characters also are not so distinct as they would be at full maturity; but they point unmistakably to the type of Neandertal, Spy, and Krapina — the so-called *Homo primigenius* which now also becomes *Homo mousteriensis*. It was a rather stocky type, robust and of a medium to low stature. The

arms and legs were relatively short, especially the forearm and from the knee down, as is the case among the Eskimo. Ape-like characters are noticeable in the curvature of the radius and of the femur, the latter being also rounder in section than is the case

FIG. 140. — *Homo primigenius*, or *mousteriensis*, from the Cavern of Le Moustier (Dordogne). *Norma Lateralis.*

with *Homo sapiens.* In the retreating forehead, prominent brow ridges, and prognathism it is approached to some extent by the modern Australian.

There is, therefore, no longer any doubt as to the physical characters of man of the Mousterian epoch — man that lived in Europe 100,000 years ago. But the Chellean industry is older than the Mousterian, and to the present time no human remains have been found that can with certainty be dated back to the oldest epoch of the paleolithic period. When found, if ever, they will probably be even more primitive in type than *Homo primigenius.* The differences may be great enough to be considered specific, as the Chellean epoch was a long one, reaching well back into the long

Mindel-Riss interglacial epoch. But the Chellean industry already represents a degree of intelligence that must stamp its author as distinctly human — *Homo antiquus* perhaps, but at all events *Homo*. This much cannot at present be said concerning the author of the eolithic industry, particularly in its earliest manifestations. The latter is found not only in the lower Quaternary but also in the Miocene, and even in the Oligocene at Boncelles, a station recently explored by Rutot. From the Oligocene and Miocene up into the lower Quaternary the industry remained practically at a standstill, representing one and the same degree of intelligence.

FIG. 141. — Implements of *Homo mousteriensis* from the Lower Grotto of Le Moustier.

The successes of the last year in the search for *Homo primigenius* should encourage anthropologists to continue their search for man of the Chellean epoch and the ancestral form that produced the eolithic industry.[1] The former may indeed prove to be of practically the same type as *Homo primigenius* of Le Moustier, near the outstretched left hand of which was found a carefully finished flint implement of the Acheulian type, as well as a Mousterian scraper. (See fig. 141.)

[1] The remarkable lower jaw recently found by Professor Schoetensack in Tertiary deposits at Mauer, near Heidelberg, may represent this ancestral type.

It would not be possible to enter here into details relative to all the recent paleolithic discoveries made in Europe. Some of these, like the one at Le Moustier, are at localities known for years and supposed to have been exhausted; as for example, those of Hauser in the classic stations of the Vézère, particularly La Micoque; and of Commont at St Acheul. This should serve to emphasize once more the importance of thoroughness in archeological excavations.

Two new localities that give much promise are La Quina (Charente), a Mousterian station being explored by Giraux and Martin; and Willendorf, near Vienna, which is in the hands of Szombathy and Obermaier. Willendorf is in a terrace about 30 meters above the Danube, the section showing superimposed layers of late Mousterian (Aurignacian), Solutrean, and Magdalenian facies respectively. The greater part of the collection had not yet been unpacked before I left Vienna; but Herr Szombathy, the curator, very kindly showed me the most remarkable single specimen — a human figurine, full length, carved out of stone, with all the steatopygic and negroid characters of the Hottentot race. It came from the upper, or Magdalenian horizon. This may be connected in some way with the paleolithic negroid race discovered by the Prince of Monaco in the *Grotte des Enfants* and named by Verneau *Type de Grimaldi*.

YALE UNIVERSITY,
NEW HAVEN, CONNECTICUT.

COPPER NECK-RINGS OF SOUTHERN ALASKA

By GEORGE T. EMMONS

In the narratives of the early European explorers who visited the Northwest coast of America in the latter half of the eighteenth century, frequent mention is made of objects, implements, and ornaments of copper found in possession of the natives. These were unquestionably of virgin metal and of home manufacture, for while odd pieces might have been carried across the continent during the course of centuries of trade and migration, the very abundance and the typical forms would argue to the contrary. The great copper fields of Alaska and the Northwest Territory, extending from Copper river through the White river district to the vicinity of White Pass were well known to the local inhabitants and furnished one of the principal sources of revenue in their trade with the coast Tlingit, long before the Pacific ocean was exploited by Europeans.

The Chilcat, who occupy the head of Lynn Canal, controlled this trade, upon which their wealth and power greatly depended. They traveled inland in large bands two or three times a year, when they met the interior people by appointment, and traded with them on their own terms, for the Athapascan hunter, mild in character, living in patriarchal simplicity and following his food supply throughout the greater portion of the year, was dominated and held in practical vassalage by the more virile and savage Tlingit, and even as late as 1890 he was allowed to visit the coast only under escort, without the privilege of trading with outsiders. The arrogance of the Chilcat is best illustrated in their destruction of the Hudson's Bay Company's post at Fort Selkirk in 1852. They looked upon this interior trade as their exclusive right, and when the rich fur fields of the lower Yukon valley attracted the Company's attention and a factory was there established, a war-party under the leadership of Chartrich, the hereditary chief of the Connahtabee

clan, marched inland four hundred miles, captured and burned the post, and, setting the factors free, admonished them against any further encroachments upon their preserves. This is one of the few instances on record when this all-powerful Company acknowledged and accepted defeat at the hands of a rival.

The Chilcat traded also with the Yakutat people of Bering bay for the copper that they in turn procured from the interior tribes of Copper river. In winter they traveled overland to the coast, but in spring and summer they made the passage of Lynn canal, Cross sound, and thence coastwise in their canoes, a distance of some 250 miles. Ismailof, the Russian pilot, mentions meeting at Yakutat in 1788 a considerable body of Chilcat under their chief Ilchak on their annual trading expedition.

Unquestionably the Huna and Sitka tribes shared in the barter with the Yakutat, but the Chilkat were the progressive traders of the north, and it is still traditional with the Tsimshian and Haida that their earlier supply of this metal came to them from this people. The Athapascans inhabiting the copper region were a utilitarian, inartistic people whose whole life was a struggle with nature and the elements for their food supply, and they seem to have used metal for daggers, spear-blades, and arrowpoints only. Few or no ornamental pieces have ever been found among them. In mining operations hereabouts, spear-blades of copper have been exhumed fifteen to twenty-five feet below the surface of the ground, attesting to the antiquity of the manufacture and use of this metal. As late as 1885 bullets and slugs were hammered out for use in the smooth-bore muskets against big game. The native source of supply was found either in the form of placer nuggets or in outcropping veins of pure metal, for neither the manner nor the means of reducing the ore when found in combination with other substances was known.

The coast people utilized copper not only for weapons and hunting implements, but fashioned it into ornaments for the ears and nose, bracelets, anklets, neck-rings, masks, rattles, the overlaying or ornamentation of dancing implements, and that peculiar shield-like object known as *tinneh* which had an intrinsic value according to its size, and a still greater personal value dependent upon its ownership and its use on occasions of ceremony, when it might be

cut in pieces, given away, or placed on the memorial column. The early traders, finding copper in such demand, immediately included it in their exchanges for furs, and even worked it into shape after native designs.

Another source of supply was from stranded vessels that were copper sheathed and bolted, and so in time it became so common that the northern trade was abandoned as unprofitable. The superiority of iron was recognized as soon as it was acquired, when copper

FIG. 142. — Copper Neck-ring of a Nishka Chief, Nass Harbor, British Columbia.

fell into disuse except for personal ornaments and the decoration of dance paraphernalia, and with the later introduction of silver, and then of gold, the demand for copper practically ceased.

The neck-ring here illustrated (fig. 142) was obtained from a Nishka chief living at Kincolith, Nass Harbor, British Columbia.

He valued it highly, and said that it had been in his family through four or five generations when they lived on the Nass, for Kincolith is a mission village of recent years, where the people have been gathered from the older river settlements.

The use of the neck-ring was for occasions of ceremony, when it was worn around the neck both as an ornament and as an indication of rank and wealth ; and after death, as a mark of respect, such pieces, as well as the copper shield or the Chilkat blanket, might be displayed on the mortuary column or the grave-house.

Neck-rings are among the rarest of copper objects known to the Northwest coast, and while the Tlingit of southeastern Alaska controlled the trade in this metal, and unquestionably had this ornament, yet I never saw one in their possession, although in the forgotten rubbish of an old communal house at Wrangell I found one of iron, similar in all respects, which was used in like manner, and when a defect occurred in one of the twisted strands, copper had been used to repair it.

Dr C. F. Newcombe, of Victoria, British Columbia, whose years of intimate acquaintance with the Haida give him a very accurate knowledge of their possessions, past and present, tells me that he has seen four of these copper ornaments on the Queen Charlotte islands — one at Klue, one at Dadens, North island, and two at Masset — and knows of one other, collected at Masset for the late Dr George M. Dawson, which was taken from an old family grave by Henry Edenshaw, now an old man, in whose father's life it was said to have been in the family for three or four generations.

So far as I know, all of these ornaments are the same in form and character, consisting of two twisted strands to represent the typical rope of the Northwest coast ; for whether it be the head-dress, neck or shoulder girdle of shredded cedar-bark, the halibut line of spruce-root, the warp or woof of the blanket of bark or goat-wool, the fish-net of nettle or sinew, or cordage for any purpose, two strands alone were employed, which marked it in contradistinction to the three- or four-strand rope of our manufacture.

The antiquity of the use of the copper neck-ring is told in the legend of The Salmon Doctor, which goes back to primitive days, before the curse of civilization had blighted this coast. It is known

equally to the Haida and the Tlingit, and like many other of their old stories is localized at different points. As given to me by an old Sitkan it occurred at the summer fishing camp of his ancestors at Naqwasina bay on Baranof island, some fourteen miles to the northward of Sitka; and near the entrance, in a cave-like overhang of the rocky shore, was pointed out the last resting place of the hero of the tale.

To give the story without going too deeply into detail, as I wish simply to illustrate the early use of the copper neck-ring —

A family of the Sitka tribe had removed to their summer camp near the mouth of the main stream to catch and cure their winter food supply of salmon. The son of the chief — a very little boy — came to the mother for something to eat and was given a piece of dried salmon that was slightly moldy; this he threw away in anger and heartily abused the whole salmon family. In these early days of life human beings and animals, including fish and birds, were much nearer to each other, both physically and spiritually. In the beginning they were all one people, but when light was suddenly given to the world, great consternation prevailed, and while some retained their human form others fled to the woods and assumed the forms of animals, and in like manner the air and the sea were peopled. As the old legends abound in transformations and in mixed unions, it can be seen how the Tlingit should look upon the different species as separate families possessing human attributes. Thus the salmon were considered as a great people who lived far out in the sea and every summer visited the rivers and the shore, and while they were legitimately taken in great numbers and constituted the principal food supply of the people, yet they were always spoken to or of with great respect, and their capture and treatment were according to conventional rules that were strictly observed. The silver salmon swimming in the stream heard with shame the abuse heaped upon them; and as the little boy, attracted by some gulls, walked into the water, they dragged him under, when he was transformed into a salmon and taken to their ocean home. The following spring, when the salmon made their reappearance, one more lively and beautiful than the others was noticed to remain about where the little boy was lost, until he attracted the attention of the father, who, after re-

Postscript

The copper neck-ring, described in the accompanying paper, having been submitted to Mr Wirt Tassin, chemist of the United States National Museum, for examination, Mr Tassin kindly reports as follows:

A qualitative test of the metal shows the presence of silver.

Examination of an etched surface shows that the strands are each made up of two other strands made up apparently of hammered sheets.

These observations give rise to the following conclusions: The copper is perhaps "native," since silver is a constant constituent of the copper of the Copper River and Lake Superior regions. The sheets composing the individual strands taper from the centers to the ends and vary greatly in thickness at different points, a condition which would arise when hammering a nugget into a sheet with the idea of getting as great a length as possible with a minimum width.

My idea of the method of manufacture is somewhat as follows: The native nugget was heated to a full red and quenched to make it soft and then hammered from the ends to the middle. It was then re-heated and worked in the same manner, except that the work was applied along the edge. These two processes were repeated alternately till the desired flat was obtained.

Two of these flats were placed side by side, one end fastened, and both were then twisted together, but not "*laid up*." When a certain amount of work had been done the twist was heated, cooled, and rounded up by hammering, thus forming a strand. Two such strands were thus twisted to form the necklace. Two flats make a strand and two strands make the necklace.

WIRT TASSIN.

peated efforts, finally speared him and gave him to the mother to prepare for curing. Upon attempting to cut off the head, the knife encountered a copper neck-ring which the mother at once recognized as that worn by her lost son, whose disappearance was explained in the transformed fish, which was carefully wrapped in a cedar-bark mat and placed in a burial chest on the roof of the house. Soon after this the camp was much disturbed by the faint droning of a shaman's chant, as if far in the distance. Each succeeding night the sound became more audible, and finally was traced to the burial box containing the salmon body, when there came forth a shaman, in full regalia, whose great power and long life with his people is still traditional.

Since writing the above my attention has been called to the illustrations of silver and gold neck-rings on pages 84–87, 106–108, of Anderson's *Scotland in Pagan Times*. The form and character of these ornaments, and of one in particular, is almost identical with the Nishka copper neck-ring here described. That one has any connection with the other, however, is a mere matter of conjecture, and the opinion of one person is as worthy of consideration as that of another. I would only call attention to the fact that the twisted fiber, hide, or metal of the Northwest Coast people is in all instances of two strands, as is shown in the illustration, while the prehistoric Scotch specimens are of a varying number of strands.

PRINCETON,
NEW JERSEY.

THE SIXTEENTH INTERNATIONAL CONGRESS OF AMERICANISTS

By GEORGE GRANT MACCURDY

The Sixteenth International Congress of Americanists was held in the University building at Vienna, Austria, September 9 to 14, 1908. The active and associate members in attendance numbered 376.

In addition to Austria the following countries were represented by official delegates present: Argentina, German Burmeister; Belgium, J. Denucé; Brazil, Manuel de Oliveira Lima; Chile, Julio Montebruno; France, Professor L. Capitan; Holland, Jonkheer L. C. van Panhuys and Dr J. D. E. Schmeltz; Italy, Professor E. H. Giglioli; Japan, Professor Ryozaburo Sakaki; Mexico, Gilberto Crespo y Martinez; Paraguay, Leo Hirsch; Peru, Professor Max Uhle; Portugal, José Comte de Paraty; Prussia, Professor Eduard Seler; Spain, Professor Sanchez-Moguel; Sweden, Professor C. V. Hartman; United States of America, Professors Franz Boas and M. H. Saville, Dr George Grant MacCurdy and Dr Charles Peabody; Venezuela, Felix Stiassny. There were also in attendance delegates from seventeen learned societies and institutions from various parts of the world.

The Congress was formally opened on Wednesday morning under the high patronage of Archduke Rainer, who, although not able to be present, sent a message which was read by the President of the Congress, Wilhelm Freiherr von Weckbecker, in his opening address. Later in the week Archduke Rainer held a reception in the Imperial Museum of Natural History. The Congress was also honored by the presence and faithful attendance of H. R. H. Princess Therese of Bavaria, who was one of the honorary presidents.

The first session devoted to the reading of papers was opened with an address by Professor Franz Boas (New York), on "The

Results of the Jesup Expedition." After paying a deservedly high compliment to the late Morris K. Jesup, the speaker set forth the methods employed in the research. One result has been to establish evidence of the shifting of the Northwest Coast tribes. They do not seem to have been stable units, but rather in a continual state of flux. There is no longer any doubt of a connection between the peoples of Siberia and North America. A race probably entered the American continent from Siberia before the glacial period, and later there was a re-migration to Siberia. Marked ethnological differences have been noted among the races of western America. Professor Boas announced that the publications based on the Jesup Expedition will soon be completed.

Sir Clements MARKHAM (London) followed with a paper on "Some Points of Interest in the History of the Incas by Sarmiento." The publication of the Sarmiento manuscript in August, 1906, has thrown new light on the story of Andean civilization and has corrected some misconceptions. Sarmiento was a great addition to the authorities on Inca history and civilization. The subject was treated under the following heads: The revolution in the time of the 6th Inca; Story of the occupancy of Cuzco; Reforms of Inca Rocca; Confederacies subdued by the Incas; The two great Incas, Pachacutec and Tupac; Date of the completion of the Incarial socialistic system; The policy of forming colonies; Socialism; Interest of the subject; Necessity for collating works of Spanish lawyers.

Sir Clements MARKHAM read a second paper, on "A Comparison of the Ancient Peruvian Carvings on the Stones of Tiahuanaco and Chavin." After discussing the supposed extent of the ancient megalithic empire in Peru, evidence from ruins was cited. The argument is strengthened by comparison of carvings on ancient stones. The two stones were described in detail. A comparison of the carvings on them proves them to be the work of the same people. The important recent paper by Dr Gonzalez de la Rosa on the works of Blas Volera seems to give much greater value to the list of sovereigns given by Montesinos, and history may eventually give support to conclusions derived from a study of ruins and of the carved stones of Tiahuanaco and Chavin.

Dr William THALBITZER (Copenhagen) presented a communica-

tion entitled "The Angakoks or Pagan Priests of the Eskimo at Ammassalik, East Greenland." These Eskimo were discovered in 1883. They have for centuries preserved a marked and characteristic culture, a peculiar dialect, and a great wealth of legends, myths, and drum chants. In 1894 a commercial and missionary station was established there by the Danes, and once a year a vessel is despatched from Denmark and generally reaches the station about the beginning of September. Dr and Mrs Thalbitzer wintered at this spot in 1905–06, having been sent out by the commission for the prosecution of geological and geographical researches in Greenland, in order to carry on linguistic and ethnological researches. The population, which is scattered over about twenty miles of the coast, consists of altogether about 450 souls, all Eskimo of pure origin. The angakoks (in Eskimo *angakeg*, plural *angakkin*) are or rather were the national priests and doctors of the Eskimo. These two callings are indissoluble, inasmuch as the people of Ammassalik look upon sickness as a defect of the soul; their notion is that in every part, in every member of the human body, there is a soul which in certain circumstances may be lost; that part of the body which has lost its soul falls ill, and only the angakok is able by the aid of his spirits to restore the soul and thereby health to the sick body. There are three things for which an angakok invokes the aid of the powers: the chase, sickness, and barrenness in women. At the present day the people of Ammassalik live half in their old orthodox faith, half in the new ideas. Many of them still mutter charms (*serratit*) on the sea, when they are out in their kaiaks, and conceal amulets in their clothes. They keep up their primitive ceremonies to some extent, fasting and turning away from the light on the occurrence of a death. But their own priests have given up their calling and are about to give place to the foreign missionaries. In 1906 there were only two of the angakoks who still refused to be baptized; they displayed great contempt for the new doctrines, and were full of faith in their own guardian spirits and other supernatural beings, especially in the divinity of the moon and in the Old Woman of the Sea.

Professor Paul EHRENREICH (Berlin) took as his subject "Our Present Knowledge of the Ethnography of Southern Brazil." Faulty

nomenclature has until recently led to confusion in respect to the ethnic groups that once inhabited what are now the states of São Paulo, Parana, Santa Catharina, and Rio do Sul. The recent works of Ihering, Ambrosetti, Telemaco Borba, and Benigno Martinez have brought order out of chaos. This is particularly true of the so-called Guayañan or Guayana (the *Waiganna* of earlier authors), the Chavantes of São Paulo and to a less degree of the "Bugres" of Santa Catharina. Three different stocks were once included under the name Guayana: (1) The ancient Waiganna of Hans Stodeus which, like all the coast peoples, probably belong to the Tupi-Guarani family; (2) the Kaingang or Kame from the interior of São Paulo, Parana, and Rio Grande, doubtless members of the Gës group; (3) the Ingain on the Guaira-Cataract of Alto Parana, also to be found in southwestern Paraguay, which form a special stock of the Gës group. The Chavantes of São Paulo have nothing in common with the so-called Akua of the Araguaya and Tocantin regions. They do not belong, as do the latter, to the Gës group, but form an entirely isolated stock with independent language. The entire lack of linguistic evidence makes it impossible to speak with certainty concerning the place of the so-called "Bugres." They are not primitive Gës as heretofore assumed, and are also quite distinct from the Botocudos and Kaingang. Their real stem name is yet unknown. There is a probable connection between them and the Tupi-Guarani as well as the Guayaki of Paraguay.

Professor J. KOLLMANN (Basel) dealt with the question of "Native Pygmy Races of America." There remains little doubt that Central and South America were once the home of a race of small human beings; that traces of it are to be found in the living tribes of those countries. To smallness of stature may be added such features as a broad, short, squarish face with pug nose. To trace the pygmy races as they spread over the earth would seem to be a fruitful task in the field of somatic anthropology. They are everywhere the starting point for the study of the races of large and middle size, and must be reckoned with in any attempt to trace the origin not only of the red man but also of mankind in general.

Professor L. CAPITAN (Paris) presented three papers, the first

being on "The Cruciform *Entrelac* in Ancient America, Japan, China, India, and Gaul." This sign is to be seen on vases and shell ornaments from the mounds of the United States. Analogous figures occur in ancient Mexican manuscripts. It is found also on Merovingian buckles and as a decorative motive in China and Japan. Of the remaining two subjects one dealt with the large breast-rings of ancient Mexico in comparison with similar rings from Japan, China, Oceanica, and Gaul; the other referred to the analogies between the Mexican *omochicahuatzli* and specimens from the paleolithic caverns of southern France.

"Elements of the Maya and Mexican Zodiacs" was the subject chosen by Mr Stansbury HAGAR. The elements of the Maya and Mexican zodiacs may be studied in six groups of material, all of which yield results consistent with each other. Five Mexican asterisms described by Tezozomoc and Sahagun, in the order given by the former, represent the six signs from Cancer to Sagittarius inclusive, the Libra and Scorpio symbols being combined. Drawings of these asterisms were given by Sahagun and are reproduced by Dr Seler in his valuable paper on the Venus Period in the Picture Writings of the Borgian Codex Group. In the same paper Dr Seler describes a series of five deities who, in the Mexican codices (Borgian, Bologna, and Vaticanus B) and the Maya codex of Dresden, are represented in the act of hurling spears successively at a water goddess, jaguar, maize goddess, soothsayer, and warrior. In the order given the objects struck are symbols of the same six signs mentioned above, Libra and Scorpio being again combined. The spear-throwers represent the six opposite signs in the order given, except that Aries-Taurus unaccountably exchanges place with Gemini. Nearly all of the deities so well described by Dr Schellhas in his paper on the Deities of the Maya Manuscripts must also be regarded as rulers of the zodiacal signs. The Maya and Mexican month and day signs also include attributes and symbols associated with the zodiac. The sacred city of Izamal in Yucatan was originally surrounded by twelve pyramid-temples each of which represented one of the signs in its proper relative position in the zodiacal circle. This plan reflected on earth the supposed celestial design in the same manner as the plan of the Inca capital, Cuzco,

which Mr Hagar had described at a previous meeting of the Congress. The names and attributes of five of these signs are given by Lizana. Finally, the names and rituals of the Maya and Mexican festivals echo the attributes of the sign through which the sun was passing at the time. The correspondence between the Maya and Nahuatl symbols amounts to practical identity in many instances. Every sign in both zodiacs echoes the symbolism of the corresponding Peruvian sign, as described in Mr Hagar's two papers in the Proceedings of the Congress (The Star-Chart of Salcamayhua, Paris, 1900; the Cuzco paper above mentioned, New York, 1902) and in The Peruvian Asterisms and Their Relation to the Ritual, read before the Congress at Stuttgart, 1904, and published in the *American Antiquarian* vol. 26, p. 329 et seq.; and the three American zodiacs in turn combine with symbols peculiar to themselves numerous others which indicate remarkable Oriental analogies. These analogies are too arbitrary to be satisfactorily explained as coincidences or as like results of like causes acting on the human mind. The group of the spear-throwers is found in codices, all of which according to Professor Saville are regarded as having been completed prior to the first historic coming of Europeans. The symbols contained therein cannot, therefore, have been subject to post-Columbian influence, nor can such influence be reasonably supposed to have invaded any of the other symbols referred to. It is, therefore, a legitimate question — one which, in different material, interested the genius of Humboldt — whether we must not consider that the correspondence between the astronomical symbolism of the two hemispheres indicates an interchange of ideas between them at some time and by some route as yet unknown, but before the discovery of Columbus. Beyond this the material indicates the preëminence and the complexity of the astronomical cult amongst the most advanced peoples of both the Americas. It is hoped that this elucidation of the Mexican symbolic astronomy may help toward the further identification of the Mayan and Mexican hieroglyphs of which, as yet, we know so little and from which we may hope to learn so much of ancient America.

Dr Charles PEABODY (Cambridge, Mass.) gave an account of "Recent Cave Work in America." In Missouri and Arkansas,

throughout the "Ozark Uplift," are many rock-shelters, much resembling those of Dordogne. These have been occupied at various times by prehistoric peoples. Their presence is attested by ashes, charcoal, split animal bones, flint-chips, and implements of various materials. Occasionally stalagmitic deposits of ten to forty centimeters are found above evidences of human occupancy. The culture of the occupants is primitive, "problematical" objects are absent, pipes almost missing, ground stone objects very rare, pottery rude, and worked shell practically not to be found. The articles in chipped stone and worked bone are, however, numerous and skilfully wrought. The limitations of the culture place it in marked contrast to that of the eastern parts of the same states, near the Mississippi river. There seems to have been little intercourse between the highlands and the lowlands.

The subject presented by Dr George Grant MacCurdy (New Haven, Conn.) was "The Alligator in the Ancient Art of Chiriqui." The ancient art of the Province of Chiriqui, Republic of Panama, is particularly rich in decorative motives derived from animal forms. The animals most often represented are the fish, frog, parrot, jaguar, armadillo, and alligator, the last two being the favorites. The motives derived from the armadillo are as a rule plastic. They were discussed by the author at the Quebec Congress in 1906. Plastic forms of the alligator are not often met with except among gold ornaments. Painted forms of the alligator and derivatives therefrom are, on the contrary, very abundant, especially in two groups of pottery. These groups as well as gold ornaments were described and the evolution of decorative motives derived from the alligator was traced. It was pointed out that conventionalism may result from (1) the reduplication or elimination of parts; (2) transposition and substitution; (3) isolation of parts and their use independently of the whole, and (4) wholesale reduction and simplification. To give balance, for example, a second head may be added. Some part may be eliminated for lack of space, or transposed or substituted for another part. An instance of wholesale reduction and simplification is the representation of the alligator by means of a short curved line in a horizontal position, with a spot in the hollow of the curve to indicate the dermal markings. This motive is re-

peated to form an ornament about the rim of a vase. Spines as well as scales are used as independent motives. Among the gold and bronze objects the entire alligator head is a favorite decorative motive, being attached to plastic forms, that may or may not otherwise have reference to the alligator. A fine example is the mythical creature with human body and alligator head. On either side of the head and of the feet is an additional alligator head as an ornamental and symbolic feature. There are a number of representations in gold of this alligator-man with slight variations in details of execution. It must have been an important deity. The finest example of Chiriquian ceramic art, a chalice-shaped vase, is ornamented with a painting of this alligator-man in black, red, and purple on a cream ground, the central figure being accompanied by conventional scale, spine, and alligator motives instead of by additional alligator heads.

Other papers were read as follows:

Professor Heinrich MATIEGKA (Prague), "Parallelen oder Beziehungen zwischen der nordamerikanischen und mitteleuropaïschen steinzeitlichen Keramik."

Regierungsrat Franz HEGER (Vienna), "Die archäologischen und ethnographischen Sammlungen aus Amerika im k. k. naturhistorischen Hofmuseum in Wein."

Manuel de Oliveira LIMA (Bruxelles), "Sur l'évolution d'une ville du Nouveau Monde du 16ième au 20ième siècle, à propos de la récente transformation de Rio de Janeiro."

Professor Don Antonio SANCHEZ-MOGUEL (Madrid), "Intervencion de Fray Hernando de Talavera en las negociaciones de Colon en los Reyes Catolicos."

Miss Adela C. BRETON (Montreal), (1) "Exhibition of a Copy of the Ancient Plan in the Museo Nacional, Mexico, supposed to be Part of a Plan of Tenochtitlan"; (2) Survivals of Ceremonial Dances Amongst the Indians in Mexico."

Dr Jean DENUCÉ (Uccle-Bruxelles), (1) "Une grande carte de l'Amérique par les Reinel (vers 1516)"; (2) "Note sur un vocabulaire complet de la langue Yahgane (Terre de Feu)."

Ignacio MOURA (Pará), "Sur le progrès de l'Amazonie et sur les Indiens."

Professor R. LEHMANN-NITSCHE (La Plata), "Zur physischen Anthropologie der westlischen Chacostämme."

Dr A. WIRTH (Munich), (1) "Die Autobiographie Franz Rawie's (um 1720)"; (2) "Die Theorie Trombettis von dem Zusammenhange der amerikanischen und Asiatischen Sprachen."

Professor Franz RITTER VON WIESER (Innsbruck), "Die Weltkarte des Pierre Destelier von 1553 im Besitze Sr. Exzellenz des Grafen Hans Wilczek."

Dr J. D. E. SCHMELTZ (Leiden), "Die niederlandische Tumac Humac-Expedition in Surinam."

Jonkheer L. C. VAN PANHUYS (Hague), (1) "A Remarkable Book on the Indian Mind"; (2) "Communications about Ethnography and History of Surinam."

Professor Heinrich PABISCH (Vienna), "Der Fischfang mit Giftpflanzen in amerikanischen Gewässern."

Professor Marshall H. SAVILLE (New York), "Archeological Researches on the Coast of Esmeraldas, Ecuador."

Dr H. Th. PREUSS (Berlin), "Das Fest des Weines bei den Cora-Indianern der mexicanischen Sierra Madre Occidental."

Professor Eduard SELER (Berlin), (1) "Die Sage vom Quetzalcouatl und den Tolteken nach den in neuerer Zeit bekannt gewordenen Quellen"; (2) "Die Ruinen von Chich'en-Itza in Yucatan"; (3) "Der altmexicanische Federschmuck des k.k. naturhistorischen Hofmuseums. Bericht uber eine Untersuchung seiner Konstruction und Beschaffenheit." (Both Seler and Heger agree with Mrs Nuttall in calling it a head-dress.)

Hauptmann a. D. L. WOLLMAR (Heidelberg), "Die mexikanischen Bilderschriften und die Zuverlässigkeit ihrer alten und ihrer neueren Interpretationen."

Professor Juan B. AMBROSETTI (Buenos Aires), "La Question Calchaquie et les travaux de la Faculté de Philosophie et Lettres de l'Université Buenos Ayres."

Professor Max UHLE (Lima), (1) "Die Frühkulturen der Umgebung von Lima"; (2) "Zur Deutung der Intihuatana."

Professor Enrico GIGLIOLI (Florence), (1) "Intorno a due rari cimeli precolombiani dalle Antille, molto probabilamente da San Domingo"; (2) "Di certi singolari pettorali di pietra e di conchiglia precolombiani, dalla Venezuela."

Professor Julius NESTLER (Prague), (1) "Ein von dem österreichischen Konsul in Managua (Nicaragua) gefundenes Idol"; (2) "Die Ruinenstätte von Tiahuanaco in Bolivien und ihre Bedeutung."

Professor R. SAKAKI (Kyoto), "Une nouvelle interprétation du pays 'Fou-sang.'"

Alberto FRIČ (Prague), "Völkerwanderungen, Ethnographie und Geschichte der Conquista in Südbrasilien."

Professor C. V. HARTMAN (Stockholm), (1) "Some Features of Costa Rican Archeology"; (2) "The Photographon, an Instrument which will Replace the Gramophone."

Dr Rudolph TREBITSCH (Vienna), "Ueber den Wert phonographischer Aufnahmen von Gesängen der Naturvölker."

Dr W. THABITZER (Copenhagen), "Demonstrationen von Lichtbildern der heidnischen Kultur der Ostgrönländer nebst Erläuterungen."

A. G. MORICE, O.M.I. (Kamloops, British Columbia), "La position du verbe dans les langues Denées."

P. Fr. HESTERMANN, S.V.D. (Mödling), "Ueber die Panosprachen und ihrer Beziehungen."

Professor P. W. SCHMIDT (Mödling), "Zur Lautlehre der amerikanischen Sprachen und ihrer Transkription."

Among the publications presented to the Congress may be mentioned: "Reisestudien aus dem westlichen Süd-Amerika," by Princess Therese of Bavaria; "Exploraciones Arqueologicas en la Ciudad Prehistorica de 'La Paya,'" by Professor Ambrosetti; "Nouvelles Recherches sur la Formation Pampéenne," by Professor Lehmann-Nitzsche; a "Festschrift" in honor of the Congress, including two papers by Regierunsrat Franz Heger, relative to the American archeological and ethnographical collections in Vienna, especially the ancient feather head-dress; "Die Karten von Amerika in dem Islario General des Alonso de Santa Cruz," by Dr Franz Ritter von Wieser; "Beiträge zur Völkerkunde von Surinam," by C. A. de Goeje; the third volume of collected studies by Professor Seler; and the first volume of the Publications of the American Ethnological Society of New York, containing the Fox Texts collected by Dr William Jones.

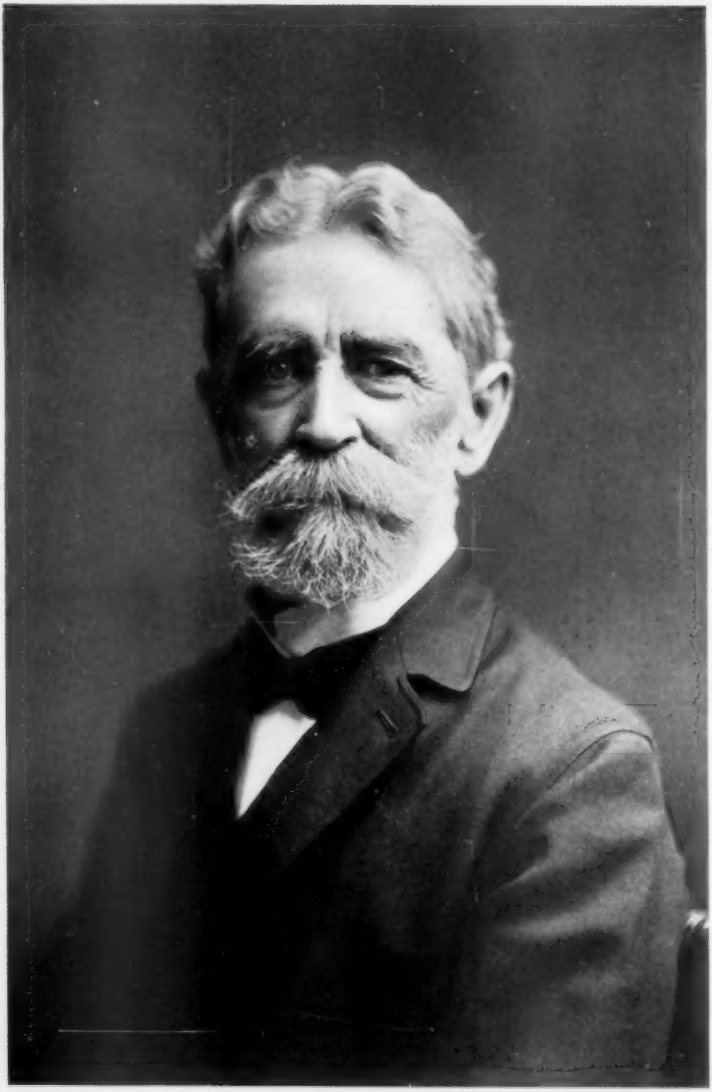
The social features as well as the opportunities for sight-seeing and excursions were much appreciated by the members. Special provisions were made for visiting the royal imperial museums, the Schatzkammer, the phonogram archives of the Imperial Academy of Sciences, the Museum für österreichische Volkskunde, the Palace of Schönbrunn, Kahlenberg, and the Prater. The evening entertainments included complimentary tickets to the Royal Opera and Theater, and a banquet given by the municipality at the Rathaus. The invitation of Count Hans Wilczek to spend Sunday at Schloss Kreuzenstein as his guests was quite generally accepted.

At the closing session it was voted to include Portuguese as one of the official languages of the Congress, the next session of which will be held in 1910. As this will mark the hundredth anniversary of both Mexico and Argentine Republic, the Congress will meet

first in Buenos Aires during the month of May, and in Mexico City in September.

Owing to the lateness of the season only about twenty-five members were able to take part in the excursions to Budapest, Lake Balaton, and Bosnia and Herzegovina, which were organized to follow immediately after the close of the Vienna Congress.

YALE UNIVERSITY,
NEW HAVEN, CONNECTICUT.



O. T. Mason

1838-1908

Otis Tufton Mason

The span of Otis Tufton Mason's life, which began in Eastport, Maine, on April 10, 1838, and closed on November 5, 1908, in Washington City, covered most of the period characterized by the enormous advances of industrial arts and of science that marked the nineteenth century. During the later years of his life he expressed great satisfaction that he had been privileged to witness the modern miracles of the world's progress, and voiced a regret that he could not live to see what was yet to be.

The story of how the boy, with few advantages, became articulated with the world movements in science, begins in the business reverses of his father, which determined the migration of the family to the southward. While yet an infant, this removal brought him to Philadelphia and shortly thereafter to Haddonfield, New Jersey, where the youth, under excellent teachers and in the best of family surroundings, laid the foundation for future activities. The family moved to Woodlawn, Virginia, in 1849, and was joined by Otis in 1851. He has often said that "this was the opening of the gates of circumstance," for in 1856 he became a student in Columbian (now George Washington) University, and had chosen that path of life which he followed persistently afterward. He graduated from Columbian College in 1861. In the next year he became principal of the preparatory school, where he taught until 1884. That Professor Mason was an ideal teacher is attested by a myriad of witnesses, who join in unstinted praise of his tact, gentleness, and helpfulness, and are thankful for their association with him.

With a mind trained like the muscles of an athlete, Mason soon reached out for materials pertaining to the study he had chosen under the guidance of President Samson of Columbian College — the culture-history of the peoples of the eastern Mediterranean. The Smithsonian Institution, then entering its third decade, attracted him, and guided by the practical wisdom of Joseph Henry, he abandoned his Oriental studies and took up that of the peoples

of America. This he regarded as a crucial event in his life, and in 1872 we find him connected in his work with the Institution as collaborator in ethnology. For twelve years he gave every spare moment, aside from teaching, to the collections which had gathered in the Institution, assembling and arranging them in the new hall of the Smithsonian and preparing a catalogue. His next steps were to edit the scheme of Gustav Klemm in *Kulturgeschichte*, or the study of history as written in human handiwork (1874); to prepare a pamphlet for the guidance of archeologists in their explorations, and also a guide-book for ethnologists. From these organized and systematic beginnings have grown the present greatly improved exhibits of the National Museum. It was apparent that Mason had now found his real life-work. In 1884 he laid aside teaching and became curator of the department of ethnology in the National Museum, where for almost a quarter of a century he labored with abundant result. The Museum which had been for years the dream of Baird became an actuality in 1881, when its new building was completed, and the great collections piled in confusion in its halls began to fall into order under the constructive minds of Goode and Mason. The first years of Mason's intendency were devoted to the classification of this material, in setting forth the scope of ethnology, and in publishing the results of his studies. Among the twenty writings, mostly notes consisting of a single page, which he published in 1884, were two of a form new to scientific literature — "Throwing Sticks in the National Museum" and "Basketwork of the North American Aborigines" — and which mark an epoch in the history of ethnology. The idea which Professor Mason had in mind was that each invention takes on tribal modifications, the sum of which is the range of variation; and these, over and above the environmental causes of variation, may give clew to the origin of the invention and will reconstruct an interesting chapter of human thought. The order of arrangement for study was geocultural, and the descriptions according to natural history methods; the specimens thus accurately worked up became types. These papers evidently grew out of the plan adopted by Professor Mason in arranging the material under his charge. The writer often heard his injunction to "put like with like, and tribes and localities will take care of themselves."

The monographs cited were the forerunners of a series appearing at frequent intervals, the last, a "Vocabulary of Malaysian Basketwork," based on the W. L. Abbott collections, issuing from the press on the day of his funeral. They are of the greatest value to students, and being based on unalterable scientific description can never be superseded. The immediate and wide recognition of these works was due to the fact that they conveyed a message in an intelligible, even a literary, form. The ardent desire to say the last word on the specimens under study led him to so thoroughly examine their structure and function that he was as familiar with them as were their original makers, and this proficiency he exacted of himself before he published his results. His skill in the dissection of aboriginal handiwork, especially in the textile art, was marvelous, and the mastery of intricate detail seemed to have a fascination for him, bringing out his unusual powers as a mathematician.

Realizing, after the first enthusiasm, that a museum cannot be arranged entirely on the order of the development of inventions, Professor Mason adopted the idea of the ethnic unit, and arranged the excellent Aino collection as an example. In one exhibition case he epitomized the social and material culture of this people, and from this beginning has sprung the more elaborate type of this arrangement in the National Museum.

Professor Mason was an expert in classification. He delighted in the problems involved in the schematic arrangement of the contents of the logos, and nothing was too difficult for his active mind, which grasped and marshaled multifarious relations with the suavity of a master. The writer's first years with him, aside from routine work with the collections, were spent in collating the classifications that had been put forward as ordinating the contents of anthropology, and especially those relating to classification of the races of man, which appeared in three large wall charts. His brochure entitled "What is Anthropology?" is a model of lucidity that formed the basis of the working plan of the Anthropological Society of Washington, and with slight modification its scheme remains the basic structure of the Society to-day.

As early as 1873, Professor Mason began the preparation of a list of the tribal names mentioned in the literature on the Indians,

and by 1879, when the Bureau of Ethnology was organized, had recorded several thousand names, with references to the works in which they are found. From this list, the "Handbook of American Indians," now in process of publication by the Bureau, had its inception, and to the publication in its fuller form he contributed articles on the arts and industries of the American tribes. Mason's relations with the Bureau were intimate for many years, and to him is due, not only during its formative period but throughout its history, a commendable share in its success.

Professor Mason's collection of tribal names was enlarged constantly, the results, embracing the whole world, remaining in the National Museum as a monument to his indefatigable zeal.

In February, 1879, there appeared in the Washington press a call for the formation of an Archeological Society in Washington, signed by J. M. Toner, M.D.; Otis T. Mason, Columbian College; and Garrick Mallery, U. S. A. On the 10th of the month there assembled in the Regent's room of the Smithsonian Institution a number of persons who were willing to join in the enterprise. Professor Mason advocated the widening of the scope of the society, and proposed the name Anthropological instead. It was he who wrote the constitution under which the Anthropological Society of Washington was organized, and he remained deeply interested in it until the close of his life, contributing largely to its program and to its organ, *The American Anthropologist.*

For eighteen years Professor Mason was a member of the United States Board on Geographic Names. Until the time of his death he greatly enjoyed the work of this body, which found so useful the knowledge he commanded on the nomenclature of the American Indians.

Professor Mason was a man of wide perspective and catholicity. His early education was begun at a period when the culture side of study was its chief charm and utility; classical studies preponderated, and he fell under the sway of the literary spirit of the period. This was apparent in his activities in Washington from the early years of his novitiate when he entered into the work of the literary societies, reading papers upon subjects which were of general interest. This feature of imparting instruction was continued as long as his physical powers permitted. He was also a pleasing public

speaker, and everyone felt attracted toward him. He was a friendly man, thoughtful and kind, and so enthusiastic about his science that he compelled a like interest in everyone with whom he came in contact, likewise planting the germ of the desire to study anthropology into the minds of hundreds whom he never saw. Besides this, the stimulation of his work was felt by individuals and institutions wherever the current of thought flowed. He never forgot in anthropology that he was himself a man — he was a happy instance of an individual who could take his human interests into his work.

The alacrity with which Professor Mason attacked the problems around him was an inspiration to those who knew him; he well recognized the vastness of science, yet, rather than being appalled, with gladness of heart he reaped in its fields. He had attained the enviable stage where his work had become play, his meat and drink, and the absorption of his waking moments, and even in the night he often awoke to jot down a thought upon the tablet that always hung at his bedside. This happy combination of mental alertness, capacity for hard work, and humor, conspired to make him an exceptional man, and those who were associated with him ever felt his elevating influence.

It has been remarked that Professor Mason's chief characteristic was his optimism. Few men have been called to endure more severe trials — he saw his family fade away until but one remained, and through all the anxieties that would have overwhelmed a lesser man, he bore a most equable demeanor, and none heard him complain. The secret of this optimism was not at all grounded in fatalism, but rather lay in the deeper philosophy of education with which he was imbued, that saw in every contact with life, whether it brought pain or pleasure, something that schooled the individual and molded his character.

It is somewhat difficult, at this time, to fully appraise the value of Professor Mason's scientific work. But those who knew the care which he took to insure the accuracy of his observations do not doubt that the results of his labors will have a permanent place beside those who have been foremost in promoting the science of Anthropology; and many of his writings will be utilized by future generations as text-books in this science.

A selected list of Professor Mason's writings follows:

The Leipsic Museum of Ethnology. *Smithsonian Report 1873*, 390–410.

Ethnological directions relative to the Indian tribes of the United States. Prepared under the direction of the Office of Indian Affairs. Washington, 1875. 32 pp. (This pamphlet is based on Gustav Klemm's classification of Ethnology and formed the guide for collectors for the Centennial Exposition of 1876.)

The Latimer collection of antiquities from Porto Rico in the United States National Museum, at Washington, D. C. *Smithsonian Report 1876*, 372–393, 60 figs.

A comparison of a written language with one that is spoken only. *Bull. Philos. Soc. Wash.*, 1879, III, 139–140.

What is Anthropology? A Saturday Lecture delivered in the U. S. National Museum, March, 1882. 21 pp.

The scope and value of anthropological studies. *Proc. A. A. A. S.*, 1884, 365–383.

The relation of the mound builders to the historic Indians. *Science*, 1884, III, 658–659.

Basket-work of the North American aborigines. *Rep. U. S. Nat. Mus. 1884*, 291–306, 64 pl.

Throwing-sticks in the National Museum, *Ibid.*, 279–289, 17 pl.

Indians in the United States, June 30, 1886. *Rep. U. S. Nat. Mus. 1885*, 902–907.

Resemblances in arts widely separated. *Amer. Naturalist*, 1886, XX, 246–251.

The Ray collection from Hupa reservation. *Smithsonian Report 1886*, 205–238, 118 figs., 26 pl.

The human beast of burden. *Rep. U. S. Nat. Mus. 1887*, 237–295, 54 figs.

Cradles of the American aborigines. *Rep. U. S. Nat. Mus. 1887*, 161–212, 45 figs.

The educational aspect of the United States National Museum. *Johns Hopkins Univ. Studies in Hist. and Polit. Sci.*, 1890, VIII, no. 4, 504–519.

The natural history of folk-lore. *Jour. Amer. Fore-lore*, 1891, IV, 97–105.

Aboriginal skin-dressing. *Rep. U. S. Nat. Mus. 1889*, 553–589, 33 pl.

The ulu, or woman's knife, of the Eskimo. *Ibid.*, 1890, 411–416, 21 pl.

The land problem. Lectures before the Brooklyn Ethical Association. N. Y., D. Appleton & Co., 1892; pp. 111–130, 12 maps.

The birth of invention. *Proceedings and Addresses, Celebration of the Beginning of the Second Century of the American Patent Systems*, Washington, 1891, pp. 403–412; also *Smithsonian Rep. 1892*, 603–611.

Technogeography, or the relations of the earth to the industries of mankind. *Am. Anthropologist*, 1894, VII, 137–161.

North American bows, arrows, and quivers. *Smithsonian Rep. 1893*, 631–679, 58 pl., many figs.

Woman's share in primitive culture. N. Y., D. Appleton & Co., 1894, 295 pp., 60 figs.

Aboriginal American mechanics. *Mem. Internat. Congress of Anthropology*, Chicago, 1894, 69–83.

Historic and ethnologic science. *The Epoch*, Washington, 1895, I, 3–11.

The origin of inventions: Study of industry among primitive people. London, Walter Scott, 1895, 419 pages, 76 figs.

Influence of environment upon human industries or arts. *Smithsonian Rep. 1895*, 636–666, 1 pl., 2 figs.

Migration and the food quest: A study in the peopling of America. *Smithsonian Rep. 1894*, 523–539, map.

Primitive travel and transportation. *Rep. U. S. Nat. Mus. 1894*, 237–593, 25 pl., 260 figs.

Aboriginal American zoötechny. *Am. Anthropologist*, 1899, n. s., I, 45–81, 1 fig., 4 pl.

The man's knife among the North American Indians. *Rep. U. S. Nat. Mus. 1897*, 727–745, 17 figs.

Ethnology and archæology of Mexico. In *Mexico: A geographical sketch*, compiled by the Bureau of American Republics, 1900, 23–46.

Traps of the Amerinds: A study in psychology and invention. *Amer. Anthropologist*, 1900, n. s., II, 657–675.

Aboriginal American harpoons: A study in ethnic distribution and invention. *Rep. U. S. Nat. Mus. 1900*, 189–304, 20 pl., 92 figs.

Aboriginal American basketry: Studies in a textile art without machinery (with bibliography). *Rep. U. S. Nat. Mus. 1902*, 171–548, 248 pl., 212 figs. (Reprinted by Doubleday, Page, and Co., N. Y., in two volumes.)

The ripening of thoughts in common: Common sense is thoughts in common. *Proc. Am. Philos. Society*, 1904, XLVIII, no. 176, 148–155.

Mind and matter in culture. *Am. Anthropologist*, 1908, n. s., X, 187–196.

Vocabulary of Malaysian basketwork: A study in the W. L. Abbott collections. *Proc. U. S. Nat. Mus.*, XXXV, 1–51, pl. i–xvii, figs. 1–41, Nov. 7, 1908.

U. S. NATIONAL MUSEUM, WASHINGTON. WALTER HOUGH.

BOOK REVIEWS

The Problem of Age, Growth, and Death. A Study of Cytomorphosis, based on Lectures at the Lowell Institute, March, 1907. By CHARLES S. MINOT. New York and London: G. P. Putnam's Sons, 1908. Pp. xxii, 280. The Science Series.

This book is another contribution to the rapidly growing literature of the inner constitution of the animal body and of the value to man of a knowledge of it. Such studies, of which those of Metchnikoff are the type, constitute further attempts to stem the tide of degeneracy which everywhere threatens the human race. They are probably more effective than Galton's "eugenics," but really they may be regarded as a part of that movement, taken in a wide sense.

The term cytomorphosis is of Dr Minot's mintage, but seems to be appropriate and useful. His main thesis is that throughout life the cells of the body are undergoing change, and that this change consists in the increase with age of the non-nuclear contents of the cells at the expense of the nuclear contents. In other words, the nucleus is constantly diminishing, and the "protoplasm" increasing. This begins to take place very early, and means the same in youth as in old age, viz., senescence. Still he admits that the vigor of body and mind increases until after middle life, so that it is not proved that cytomorphosis is a pathological, nor even a degenerative phenomenon. He further shows that the rate at which it takes place diminishes with age, being, strangely enough, most rapid at an early age, and slowest in old age. His doctrine does not carry him so far as to accept the Trollope-Osler view, but he insists, and, as it would seem, justly, that the most should be made of youth and early life. The idea that mental training should be postponed until the brain structure has become rigid cannot be too soon exploded.

There is much more in the book that commends itself to unbiased minds. Although the author clings to the idea that the cell is the absolute unit of biology, and doubts the existence of cytods or enucleated cells, he is probably right in also doubting the existence of definite units of heredity, which have been so much discussed, and which have received so many names (gemmules, pangenes, biophores, plastidules, etc., some dozen in all). And although he doubts the existence of "plasson bodies," or independent protoplasmic beings, he is still on solid ground

in ascribing to protoplasm all the powers that have been claimed for such beings, and his assumption of an indefinite number of different forms of protoplasm is nothing more than seems to be taught by inorganic chemistry. Again, in defining the existence of a vital force, or internal impulse toward growth and activity, Dr Minot does but revive a view that has always been held by the best minds. The modern tendency to reject it is only a reaction against the old metaphysical Archaeus of prescientific times. On the subject of feeling and consciousness Dr Minot also utters much truth and clears up a mass of confusion. There is much else that might be justly praised if space would permit.

On the other hand, nothing can be said in favor of the literary style and character of the book. It seems to be a stenographic report of the lectures, based chiefly on the fine series of lantern views that were used. The reporter's notes have scarcely been revised, much less edited, and all the extra verbiage necessary in such demonstrations before an audience is retained. Even where the views are not reproduced in the book, the oral descriptions are left. All this not only mars the style but greatly increases and unnecessarily pads out the letterpress. Worse than this, it makes it sound egotistical, when it might not have seemed so to the audiences. But, like many other lecturers, Dr Minot makes the mistake of assuming the complete ignorance of his hearers, which is not safe in these days of popular scientific literature. He claims great originality, much of which is open to doubt. On some points, even a layman has a right to doubt. His answer to Weismann's declaration that the cell is "immortal" is superficial if not unfair. It is the germ that is immortal, and the whole claim is embodied in the doctrine of the "continuity of the germ-plasm," which Dr Minot does not reject. On any monophyletic theory of life the primordial germ-plasm has never died. If it had the life of the globe would have ceased.

The question may be raised whether Dr Minot's whole argument may not be in a circle. As set forth on page 228, it seems to "put the cart before the horse." Is not the cytomorphosis due to aging rather than the cause of it?

The author is evidently at home with his German and his Italian, but his quotations from the French are mostly faulty. Probably the worst case is the word "infallibilité" under the portrait of Verneuil. Of course it is correct in the photographic reproduction in Verneuil's own handwriting, but that is scarcely legible. On page 264 he speaks of Maupas' doctrine of "réjeunissement." There is no such French word.

LESTER F. WARD.

PROVIDENCE, R. I.

Law: Its Origin, Growth and Function. By JAMES COOLIDGE CARTER. New York: G. P. Putnam's Sons, 1907. 8°, 355 pp.

This book is worthy of the most careful attention from students of human institutions, because it is the first attempt with a measurable degree of success to define law from a scientific standpoint and to lay the foundations of a scientific study of law. Beginning with the inquiry as to what law is, Mr Carter points out that the confusion and contradiction in the attempts to define it arise from the fact that proper methods of investigation have heretofore not been adopted. Instead of *a priori* reasoning from assumptions, the actual facts as to what law has actually been among all peoples and in all epochs as well as what it now is should be accumulated and studied, for in no other way can we have a science of law. In pursuit of such inquiry the author surveys, in a general way, the laws of primitive societies, drawing upon anthropological data. This portion of the book, however, is inadequate and by no means utilizes the material which already exists on the subject. The review of the law of the early Greeks and Romans and of the Anglo-Saxons is more satisfactory but still fragmentary. The historical survey of the general development of English Law is continued down to the present time and the conclusion reached that human conduct follows its own inherent laws which are expressed or manifested in custom.

"Law begins as the product of the automatic action of society and becomes in time a cause of the continued growth and perfection of society. Society cannot exist without it, or exist without producing it. *Ubi societas ibi lex.* Law, therefore is self-created and self-existent. It is the form in which human conduct — that is, human life — presents itself under the necessary operation of the causes which govern conduct. It is the fruit of the myriads of concurring judgments of all the members of society pronounced after a study of the consequences of conduct touching what conduct should be followed and what should be avoided. . . . The conclusion is clear that habit and custom furnish the rules which govern human conduct, and that they still exert over enlightened man the same imperious dominion that they did among the primeval hordes which peopled the world before the dawn of civilization. To the absolute generality of this conclusion an exception is to be made for the influence of legislation; but the extent of this exception diminishes to a point where we may, for all large and general purposes, dismiss it from attention, when we consider that its principal function is to supplement and aid the operation of custom and that it can never supplant it and that its own efficiency is dependent upon its conformity to habit and custom. . . . Inasmuch

as conduct is necessarily controlled by previous thought, and such thought is determined by individual constitution, that is, character, and the environment, nothing can directly control conduct, which cannot control both character and environment. It is not, therefore, possible to make law by legislative action. Its utmost power is to offer a reward or threaten a punishment as a consequence of particular conduct, and thus furnish an additional motive to influence conduct. When such power is exerted to reinforce custom and prevent violations of it, it may be effectual, and rules or commands thus enacted are properly called laws; but if aimed against established custom they will be ineffectual. Law not only cannot be directly made by human action, but cannot be abrogated or changed by such action."

If this conception of law is correct, a science of law at once becomes possible. If law is not what some one man or few men arbitrarily determine it shall be, but is the form in which conduct is molded by the operation of certain natural causes, it can be studied objectively by the scientific method. That this conception is correct the author clearly shows, and in the main it agrees with the theory of the English Common Law. What is really necessary however to the foundation of law as a science is to determine further whether customs can be arranged in categories and the causes which produce them likewise be determined and classified. The author stops short of this essential inquiry. He recognizes the necessity for it but refers it to the science of Psychology, and his explanation of uniformities of conduct — habits and customs — is that "as the constitutions of men in the same society are similar and the environments similar, the thoughts must be similar and the conduct consequently similar." But while the principles of the unity of the human mind and the substantial uniformity of its action under the same environment are well established, it is necessary to go even further than individual psychology will carry us if we would understand man's habits and customs, and consequently his laws. If the appeal had been to ethnic psychology and the study of the "group mind," the foundation would have been broad enough; but nothing else will suffice because, as Wundt has expressed it, "the resultant arising from united psychological processes includes contents which are not present in the components." But if the theory is faulty at this point it does not impair the validity of the conclusions drawn from the study of custom, since this is itself a product of the ethnic mind. The discussion of the relations of law and ethics, while interesting, might also have been clarified by a fuller recognition of the concept of the group as an entity distinct from the individuals composing it.

This theory of law, while reconcilable with the various theories of Natural Law, is radically opposed to those which define law as the command of the sovereign power in a state. The currency of the latter is perhaps largely due to its apparent conformity to legislation as we know it in modern times, and it is precisely here that the scientific theory will meet the strongest doubts. Too many have confused the essential nature of law with the force applied by government in its endeavor to sustain it. This distinction Mr Carter makes abundantly clear. His discussion of the force theory is mainly in connection with the formulations of it by Bentham and Austin, and in it he points out that this theory was not the product of an original and independent inquiry into the nature of law, but was contrived to answer the supposed exigencies of political necessity. That it was thus adopted by Blackstone was pointed out in this country by James Wilson as early as 1792. It may seem hardly worth while to devote so much space to a refutation of the Austinian theory as does the author. Austin's theory was simply a restatement of Blackstone's which was founded on Puffendorf and Hobbes, the latter being derived from theological speculation. Blackstone's definition of law was refuted in the clearest and most masterly manner by James Wilson in his Lectures on Law delivered in 1790–92. He clearly elucidated the American theory that the only basis of law is consent. He finds the law to be originally custom, but custom he regards merely as the best evidence that the law has been established by the consent of all the members of the society. He therefore bases all law upon contract, but he does clearly show that contract is the essential basis of all legislation. It is a strange anomaly that this brilliant criticism of Blackstone by one of the ablest of American legal writers should be no better known than it is. The excellence of Blackstone's work as a practical treatise for instruction in elementary law has overshadowed its theoretical fallacies and the tares have been sown with the wheat.

But more important than the refutation of Austin is the discussion of the nature of legislation, its appropriate province and its limitations. This is perhaps the most interesting part of the book to the general reader, and the conclusions are applied to present-day conditions. Of legislation he says:

"Custom first operates unconsciously to produce law. In a further stage of social advancement, society becomes an organized power and consciously exerts itself to aid and perfect the development of law. Finally it comes to do what the judiciary from its inability to break suddenly from the past and from its limited capacity to continue political

instrumentalities for the enforcement of custom is unable to do, not to make law, but to make rules relating to law, as well as the complex machinery which the practical administration of law by the state requires."

Legislation, according to his theory, is essentially a function of government; law of society and the former exist not to supplant but to preserve the latter. This discussion of the province of legislation naturally leads to a discussion of codification. The limited field in which codification may be of value is shown and the absurdity of the arguments for its extended use exhibited. It is examined historically, and the author shows that the early so-called codes are not properly codes as that term is now understood, and that no successful application of codification on any considerable scale has ever been made.

The foregoing may serve to give some idea of the character and scope of the work. It is interesting and valuable not only for what it actually accomplishes for legal theory, but perhaps even more as pointing the way to the fruitfulness of the scientific exploration of the field of law. The old *a priori* theories are outgrown and the institution of law must now be studied in the light of recent attainments of anthropology. It is now seen, as was said by James Wilson, that "law can never attain either the extent or the elevation of science, unless it be raised upon the science of man." As a contribution to this true science of law this book is significant.

Warren, Pa. Edward Lindsey.

The Scope and Content of the Science of Anthropology. Historical Review, Library Classification and Select, Annotated Bibliography; with a List of the Chief Publications of Leading Anthropological Societies and Museums. By Juul Dieserud. Chicago: Open Court Publishing Co., 1908. 12°, 200 pp.

This useful little volume comprises, as indicated by its title-page, several distinct portions. In Part I, the author gives a concise and yet pretty full discussion of the varying views held by anthropologists as to the scope and content of Anthropology. Beginning with the earliest use of the term by Magnus Hundt in the early part of the sixteenth century, the various authorities are taken up in chronological order, and a brief statement made of their opinions in regard to what subjects should be included under the term Anthropology, and what divisions and subdivisions should be recognized within it. By thus bringing together the widely varying views on both these questions, the author has done a useful piece of work, and is able to show the uncertainty still surrounding the nomen-

clature of the science. Perhaps the greatest lack of uniformity is shown in the usage with regard to the terms Ethnology and Ethnography. The majority of writers, however, are coming to restrict the former to the general and comparative study of culture in all its phases, the latter to the particular, descriptive study of definite local groups. As a review of this whole matter of nomenclature, this portion of the volume will be very useful.

In the preface, the author states that he was led to consider the subject in connection with his work as librarian and bibliographer, in an endeavor to prepare a satisfactory classification for books. In Part II the classification adopted is given in considerable detail. While commendable on the whole, there are several points which deserve criticism. Some of the terms employed seem open to objection, such as Somatography, Culture Anthropology, etc., which have as yet little or no usage outside a very narrow circle. More unfortunate are several errors, which are almost inexcusable. Under Systematic or Taxonomic Anthropology, the American Race is divided into the indefensible groups of North American Indians, Mexican Indians, Central American, South American. If the principle of subdivision adopted were primarily geographic, something might be said perhaps for this arrangement, but where the basis is that of physical types, or linguistic affiliation (for both appear to be used), this grouping is absurd, for the author makes these divisions equivalent, for example, to his division of the Mediterranean branch of the "White Race" into Indo-Iranian, Semitic, Hamitic, etc. Again under Ethnography, Polynesia, as a geographical area corresponding to Micronesia, Melanesia, etc., is entirely omitted, and the island groups of Hawaii and New Zealand are singled out, and placed on an equal footing with the Malay archipelago, Melanesia, Papuasia, and other large areas. Equally indefensible is the arrangement under North American Indians. Here only eight stocks are mentioned, and these are selected apparently at random, without regard to their relative importance, the Pima, Yuma, and Kiowa, for instance, being three of the number chosen. Furthermore, Hopi and Pawnee are placed in this same category, as if they were stock names, and all the Pacific Coast tribes are lumped under one heading. There are a number of similar criticisms which might be made in regard to other parts of the classification, but these examples are enough to show that the author should have spent a little more time in familiarizing himself with the more elementary principles of his science before attempting to prepare his classification.

Part III contains a useful selected and annotated bibliography, mainly

of works on general Anthropology and Ethnography. The lists of anthropological and ethnological societies and museums and their publications will prove convenient, especially to librarians.

CAMBRIDGE, MASS. R. B. DIXON.

SOME NEW PUBLICATIONS

ABEL, ANNIE HELOISE. The historical events resulting in Indian consolidation west of the Mississippi. (Reprinted from Ann. Rep. Amer. Hist. Assn. for 1906, vol. I, pp. 233–438, Washington, 1908.)

A valuable historical essay that was awarded the Justin Winsor prize.

BARRETT, S. A. Pomo Indian basketry. (University of California Publications in American Archæology and Ethnology, vol. 7, no. 3, pp. 133–276, pl. 15–31. Berkeley, Dec., 1908.)

CONVERSE, HARRIET M. Myths and legends of the New York State Iroquois. Edited and annotated by Arthur Caswell Parker. (New York State Museum, Bulletin 125.) Albany: University of the State of New York, 1908. 8°, 195 pp., ill.

LEÓN, NICOLAS. Escritos varios y publicaciones hasta el año 1908. 16°, 34 pp., 3 ll.

A record of the writings and editorial contributions of one of the most prolific of Mexican scientific men, now published in commemoration of the close of a quarter century since his graduation in medicine. The list records the titles of Dr León's original writings, as well as of the works of various authors which he has edited and reprinted or has had printed for the first time, followed by a list of the societies and institutions with which he has been associated.

LOWIE, ROBERT H. The Northern Shoshone. (Anthropological Papers Am. Mus. Nat. Hist., II, pt. II, 163–306, 1 pl., 20 figs. New York, 1909.)

MASON, OTIS T. Vocabulary of Malayan basketwork: A study in the W. L. Abbott collections. (From Proceedings U. S. National Museum, Vol. XXXV, pp. 1–51, pls. I–XVII, Washington, 1908.)

MINOT, CHARLES S. The problem of age, growth, and death. A study of cytomorphosis based on lectures at the Lowell Institute, March, 1907. New York and London: G. P. Putnam's Sons, 1908. 8°, xxii, 280 pp.

For review, see pages 668–669.

PEPPER, GEORGE H., *and* WILSON, GILBERT L. An Hidatsa Shrine and the Beliefs Respecting it. (Memoirs Am. Anthr. Asso., II, pt. 4, Lancaster, Pa., 1908.) 8°, pp. 275–328, pl. xi–xiii. Price 50c.

SPINDEN, HERBERT JOSEPH. The Nez Percé Indians. (Memoirs Am. Anthr. Asso., II, pt. 3, Lancaster, Pa., 1908.) 8°, pp. 165–274, pl. vi–x. Price 95c.

STARR, FREDERICK. A bibliography of the Congo languages. (University of Chicago, Department of Anthropology, Bulletin V. Chicago: University of Chicago Press, 1908.) 8°, 97 pp., ill.

STONE, ALFRED HOLT. Studies in the American race problem. With an introduction and three papers by Walter F. Willcox. New York: Doubleday, Page & Co., 1908. 12°, xxii, 555 pp.

STREHLOW, CARL. Mythen, Sagen und Märchen des Loritja-stammes. Die totemistischen Vorstellungen und die Tjurunga der Aranda und Loritja. (Veröffentlichungen aus dem Städtischen Völker-Museum, Frankfurt am Main. Frankfurt am Main: Joseph Baer & Co., 1908.) 4°, x, 84 pp., ill.

TYLER, JOHN M. Man in the Light of Evolution. New York: D. Appleton & Co., 1908. 16°, xiv, 231 pp.

VAN GENNEP, ARNOLD. Religions, mœurs et légendes. Essais d'ethnographie et de linguistique. Paris: Société du Mercure de France, 1908. 16°, 318 pp.

WEULE, KARL. Wissenschaftliche Ergebnisse meiner ethnographischen Forschungreise in den Südosten Deutsch-Ostafrikas. Ergänzungsheft Nr. 1 der Mitteilungen aus den Deutschen Schutzgebieten. Berlin: Ernst Siegfried Mittler und Sohn, 1908. 4°, x, 150 pp., 63 pl., map.

WISSLER, CLARK, *and* DUVALL, W. C. Mythology of the Blackfoot Indians. (Anthropological Papers Am. Mus. Nat. Hist., II, pt. 1, 1–163. New York, 1908.)

PERIODICAL LITERATURE[1]

Conducted by Dr Alexander F. Chamberlain

[Note. — Authors, especially those whose articles appear in journals and other serials not entirely devoted to anthropology, will greatly aid this department of the *American Anthropologist* by sending directly to Dr A. F. Chamberlain, Clark University, Worcester, Massachusetts, U. S. A., reprints or copies of such studies as they may desire to have noticed in these pages. — Editor.]

GENERAL

Belck (W.) *und* **Bertholet** (A.) Die Erfinder der Eisentechnik. (Z. f. Ethnol., Berlin, 1908, XL, 241–253, 273–276.) Discussion of the question of the origin of iron-smelting (replies, rejoinders, etc.), the share of the Palestinian peoples, etc., in this invention. See *American Anthropologist*, 1907, N. S., IX, 749.

Cunningham (J. T.) The evolution of man. (Science Progress, Lond., 1908, III, 192–201.) Treats of "some of the modern conceptions of biology in relation to the human species," arguing that "anthropology requires to be reinvestigated from modern points of view." According to Dr C. "man affords an example of a single species which has started a new group, which might become a genus or family"; and "adaptive characters are due, not to selection, but to the effects of functional and physical stimulation." Also "diagnostic characters are not adaptive, and therefore not due to selection, but to blastogenic variation."

Dussaud (R.) Anciennes civilisations orientales, fouilles et découvertes. (R. de l'Éc. d'Anthr. de Paris, 1908, XVIII, 267–276.) Notes on chronology of ancient epochs (studies of King, Lehmann, Hilprecht, Thureau-Dangin, Meyer), investigations in Palestine (Petrie, Schumacher, Vincent), Elam and the Egean (J. de Morgan), the Mycenean at Delos (Holleaux), ancient Jewish documents from Elephantine (Sachan), scientific expedition to Abyssinia (Littmann, etc.), level of the Mediterranean in antiquity (Cayeux), etc.

van Gennep (A.) Le rite du refus. (A. f. Religsw., Lpzg., 1907, XI, 1–10.) Treats of "ceremonial refusal" (bishops of early Christian church, Popes, petty kings of Loango, Nigeria, etc., early Khalifs, — sometimes the order of an old woman is necessary to cause the office to be taken) in various parts of the world. Van G. considers this "a ceremonial socializing of responsibility," the chief being thus made responsible and his people with him, not he alone.

Giannelli (A.) Sulla interruzione del sulcus Rolandi. (A. d. Soc. Rom. di Antrop., 1908, XIV, 44–59, 2 figs.) Describes 4 cases of interruption of the *sulcus Rolandi* (3 female, 1 male; 3 Italian, 1 Jew; all psychopaths, 2 idiots). G. regards the presence of the median fronto-parietal fold as a mark of inferiority and an arrest of development.

Gothein (M.) Die Todsünden. (A. f. Religsw., Leipzig, 1907, X, 416–484.) Discusses in detail the 7 *peccata mortalia* or "deadly sins," as regarded by the early Christian church, its theologians and philosophers, their connection in hermetic thought with the 7 planets, the 8 mortal sins of the Eastern Church, the deadly sins in Alcuin, Prudentius, Cassian, Gregory (cf. Horace) and his successors, the 7 deadly sins in ecclesiastical art, in poetry and prose of the Middle Ages, etc. (Dante, Alanus de Insulis), the ordering of the punishments of hell according to these sins (in a group of works of the end of the 15th and beginning of the 16th centuries), the order of the 7 deadly sins (the *saligia* scheme for remembering taken up by the Jesuits); the correlation of the deadly sins with animals (the high tide of representation of these sins comes in the 13th century; the Christian fights against evil spirits, wild animals, etc., the death-dance, morality plays — in England the allegorical figures lingered longer than elsewhere), etc. Interesting is John Lilly's

[1] Beginning with Volume XI (1909) the reviews of periodical literature will be published annually instead of quarterly. An opportunity will be given to members and subscribers to procure separate copies if desired.

The Woman in the Moon, as showing how long the idea continued that the planets are responsible for calamities that lead men to sin,—a belief not yet extinct even in the most civilized quarters of the globe.

Hambruch (P.) Das Meer in seiner Bedeutung für die Völkerverbreitung. (A. f. Anthrop., Brnschwg., 1908, N. F. VII, 75–88, 4 maps.) Discusses the sea in relation to the dispersion of human races over the globe, currents, winds, etc., in particular. Few peoples have willingly set forth on the sea, and travel on the high seas has been developed only by some coast-folk, e. g., Phenicians, Northmen, Eskimo, Malays, Polynesians, Japanese. Australia and Africa (with few exceptions such as the Papel of Senegal and the Suaheli of M'rima) have no sea-faring peoples. In Indonesia and Polynesia the aborigines equal or exceed the Northmen of old. River-navigation does not necessarily lead to sea-faring; deltas and estuaries often hinder it. Ethnic pressure, love for conquest, overpopulation, etc., have stimulated sea-travel. Winds and currents have been powerful factors.

Hervé (G.) L'anthropologie de Voltaire. (R. de l'Éc. d'Anthr. de Paris, 1908, XVIII, 225–255.) Discussion of the anthropological ideas of Voltaire set forth chiefly in the *Dictionnaire Philosophique* and the *Philosophie de l'Histoire*, the *Singularités de la Nature*, etc. Voltaire was a somatic and linguistic polygenist; he also affirmed the existence of a "natural religion," which he termed *theism*. He had met aborigines of several regions of the globe, including the four American Indians from the Mississippi, whom he examined at Fontainebleau.

de Huelguero (F.) Dell' influenza del Gozzo sulle statistiche della statura. (A. d. Soc. Rom. di Antrop., 1908, XIV, 61–69.) On the basis of the statures of 3,861 recruits (for 1855–59) of the district of Aosta (av. 160.29 cm.), the author concludes that the morbidity is independent of stature, likewise the effect produced by the disturbing element. Morbidity (or diminution of development through the disturbing cause) may be a little greater for those of low stature.

Livi (R.) Sulla causa del destrismo e del mancinismo. (Ibid., 91–94.) Dr L. concludes that the fundamental cause of the predisposition to righthandedness and lefthandedness is "uterine position." This predisposition may however be counterbalanced by a number of minor causes, so that one born right-handed may become lefthanded and vice versa.

Making bread in different parts of the world. (Nat. Geogr. Mag., Wash., 1908, XIX, 165–178, 11 pl., 1 fg.) The illustrations (with descriptive notes) show cassava-making in West Indies, tortilla-making in Mexico and Central America, a bread "wallah" in India, bakery in Japan, grinding at the mill in Palestine, baking bread in Syria, Egyptian and Turkish bread, making Norwegian "flat bread," etc., modern American bread-making.

Mochi (A.) La discriminazione delle forme craniche e il sistema del Sergi. (A. p. l'Antrop., Firenze, 1908, XXXVIII, 87–126, 2 fgs.) Detailed discussion of the methods of distinguishing cranial forms, and the Sergi system in particular. According to M. the system of Sergi, while very efficacious for descriptive craniology and useful for recognizing and distinguishing cranial forms, all varieties are not comprehended under the 9 "types" established by him.

Papillault (G.) L'anthropologie est-elle une science unique? (R. de l'Éc. d'Anthr. de Paris, 1908, XVIII, 117–132, 1 fg.) Dr P. defines anthropology as "the science of human groups, leading to integral knowledge of their composition, their functioning and their needs by the help of all the technological unities having as objects the study of collective phenomena." There are somatic, sociologic, economic, and ethnologic anthropology, the last embracing very individualized technologies such as linguistics, religion, archeology, folk-lore.

Penck (A.) Das Alter des Menschengeschlechtes. (Z. f. Ethnol., Berlin, 1908, XL, 390–407, 3 fgs.) Discusses the antiquity of the human race, particularly in reference to the glacial age, etc., in Europe, and in relation to various recent theories. Not till we know for certain that the eolith-maker was man can we put back the race into millions of years, but must content ourselves with millenniums.

Primo Congresso della "Società Italiana per il Progresso delle Scienze." Sezione di Anthropologia. Parma. Settembre 1907. (A. d. Soc. Rom. di Antrop., 1908, XIV, 95–105.) Résumés papers by

Sergi on a Linnean classification of human groups; Giuffrida-Ruggeri on the teaching of artistic anatomy; Majocchi on a case of *bipartite supercilii;* Livi on the influence of medieval slavery on the anthropological characters of the Italians.

Politische Geographie. (Globus, Brnschwg., 1907, XCII, 94.) Résumés H. Gaidoz's article, "Introduction de l'ethnographie politique," in the *Revue Internationale de l'Enseignement* (Paris), 1907.

Puccioni (N.) Di alcune omologie fra le ossa dello scheletro cefalico e viscerale dell' uomo e dei cranioti inferiori. (A. p. l'Antrop., Firenze, 1908, XXXVIII, 37–85.) Treats, with bibliography of 161 titles, of homologies of the bones of the cephalic and visceral skeleton (occipital, sphenoid, temporal, parietal, frontal, ethmoid, lacrimal, nasal, maxillary, malar, and hyoid; visceral arches, sutures, fontanelles, fontanelle and wormian bones) in man and the higher vertebrates, résuméing the present state of knowledge on the subject. The most complex of the cranial bones is the temporal, the series of whose points of ossification has not yet been clearly fixed. The parietal is generally given but one ossifying center, the frontal two principal ones; the ethmoid four, the lacrimal and nasal one each, the upper maxillary five, the malar one or more, the lower maxillary perhaps six, the hyoid five. The normal fontanelles in the human skull are 4, the theoretic ones numbering 22.

Rademacher (L.) Schelten und Fluchen. (A. f. Religsw., Lpzg., 1907, XI, 11–22.) Treats of the conjuration of the dead in the *Orestes* of Euripides, the meaning of the terms used, etc. As power over good spirits is gained by prayer, so the evil are won over by curses. Personal abuse gains the help of the dead.

Rohrer (F.) Eine neue Formel zur Bestimmung der Körperfülle. (Korr.-Bl. d. D. Ges. f. Anthr., Braunschweig, 1908, XXXIX, 5–7.) For Livi's *index ponderalis* R. would substitute the formula $100 \cdot \frac{\text{weight of body}}{\text{height}^2}$.

Schuster (E.) The promise of youth and the performance of manhood, being a statistical inquiry into the question whether success in the examination for the B. A. degree at Oxford is followed by success in professional life. (Univ. of Lond., Eugenic Lab. Mem., Lond., No. III, 1907, 1–16.) Based on data in Crockford's *Clerical Directory* for the year 1899 and Foster's *Men at the Bar* (1885) and the records of Oxford. S. concludes that "success both at the Bar and in the church has a quiet well-marked causal relationship with success in the Oxford final schools, and it is probable that if a better measure of success in these professions had been available, this relationship would have been found to be still more intimate." Detailed tables are given, the lawyers involved numbering 634, the churchmen, 1,748.

—— *and* **Elderton** (E. M.) The inheritance of ability, being a statistical study of the Oxford class lists and of the school lists of Eton and Charterhouse. (Ibid., Lond., 1907, No. 1, 1–42.) Based on data in Foster's *Alumni Oxonienses* (continued, *Oxford Men and their Colleges*), the *Harrow Register* and *Harrow Calendar* and the *Charterhouse Register.* The Oxford material gave a correlation between father and son of .312 and between brother and brother of .405; Eton and Charterhouse a correlation between brother and brother of .398. Detailed tables are given.

Sergi (G.) Sul limite posteriore del lobo parietale e sui solchi occipitali esterni nel cervello dell' uomo. (A. d. Soc. Rom. di Antrop., 1908, XIV, 75–89, 1 pl.) Résumés previous studies (Kohlbrugge, Zuckerkandl, Elliot Smith, Hall, etc.) and own investigations on the limits of separation between the parietal and occipital lobes on the brain-surface, the *Affenspalte*, etc., in man and the anthropoids.

Sollas (W. J.) Paleolithic races and their modern representatives. Part I. (Science Progress, Lond., 1908, III, 326–53, 6 fgs.) Argues for the recognition in the Quaternary epoch of 4 glacial and 4 genial ages. Prof. S. holds that of the existence of man previous to the beginning of the great ice age "not a vestige of evidence, forcible enough to compel universal belief, has up to the present time been discovered." The *Pithecanthropus*, the flints of Thenay, Puy Coumy, Yenang-yung (Burma), etc., are discussed.

Strassmann (P.) Die anthropologische Bedeutung der Mehrlinge. (Z. f. Ethnol., Berlin, 1908, XL, 362–382, 11 fgs.) Treats of multiple-births from the anthropological point of view: Frequency (race, culture, ways of life, environment exert

no influence; multiple births rise and sink with increasing and decreasing birth rate, with the fertility of woman), heredity (frequent), relation to age of mother (more common in later years of married life), sex (with multiple births as with normal single births, more boys than girls are produced), weight and height (the average of the child of a multiple less than that of a single birth), mortality and prospect of life (single children more favored), etc. S. concludes that multiple births (twins, triplets, quadruplets, etc.) represent a reversive sort of reproduction becoming rarer and rarer, and the dangers to the mother accompanying such indicate a still further reduction of multiparity and the ultimate rule altogether of single births.

Vierkandt (A.) Das Problem der Felszeichnungen und der Ursprung des Zeichnens. (A. f. Anthrop., Brnschwg., 1908, N. F., VII, 110–118, 3 figs.) Discusses the question of rock-drawings in relation to the origin of drawing, with particular reference to Koch's studies of the rock pictures and drawings of S. American Indians. V. notes the poverty of elemental forms, the inclination toward agglutination of geometric elemental forms, the growth of figures from "scribblings" through the processes of agglutination and "reading in," and the giving up of the original signification for a playing with the meaning, as the chief marks of this sort of primitive art. Drawing here originates in scribblings repetitive or imitative of striæ made for practical purposes; the third stage was the drawing of significant figures,— only in the broadest sense was there at first in this stage an imitation of real objects. Gesture language may have contributed something. There is parallelism with the development of drawing in the child.

—— Die Anfänge der Religion und Zauberei. (Globus, Brnschwg., 1907, XCII, 21–25, 40–45, 61–65.) Treats of the beginnings of religion and "magic" (near, beginning, at distance). The psychological basis of "magic," lies in "the confusion of subjectivity and objectivity in both the practical and the theoretical field," — this confusion is a common human quality and not a mere isolated or peculiar phenomenon in the culture of the race. The mental life of the child offers many phenomena explanatory of the psychological mechanism of "magic." It is improbable that cultus is older than "magic," and has an independent origin. The two oldest simple religious ideas are that embodied in the Iroquoian *orenda*, Siouan *wakanda*, etc., and the anthropomorphic or analogizing concept of nature. The third stage is animism, which is not at all, as some suppose, the most primitive religious idea. A pre-animistic period of religion, in spite of Wundt's argument to the contrary, has surely existed.

Virchow (H.) Ueber Einsetzen der Zähne nach Form. (Z. f. Ethnol., Berlin, 1908, XL, 254–257, 2 figs.) Describes method of securing accurate placement of the teeth in skulls (after softening) by means of a mould, also the position of the lower to the upper jaw.

Volz (W.) Ueber das geologische Alter des Pithecanthropus erectus Dub. (Globus, Brnschwg., 1907, XCII, 341–342.) Gives results of author's investigations in the Trinil region in 1906. Dr V. concludes that the strata with the remains of the *P. e.* are not earlier than the old diluvial, nor later than late diluvial, being therefore, probably middle-diluvial. The *P. e.* is a fossil anthropoid, "an unsuccessful attempt at man."

Waldeyer (—.) Ueber Gehirne menschlicher Zwillings- und Drillingsfrüchte verschiedenen Geschlechts. (Z. f. Ethnol., Berlin, 1908, XL, 262–272.) After references to previous investigations of sexual differences in human brains and in those of twins (Rüdinger, Passet, Karplus, etc.), Dr W. treats of the brains of fetal twins and triplets of different sexes (3 cases of twins; 3 cases of triplets, — 2 boys 1 girl, 2 girls 1 boy, 2 boys 1 girl). While the majority of the male brains show a greater development of the furrows and convolutions of the cerebral hemispheres, some do not, and Dr W. does not accept Rüdinger's "law" to that effect, holding with Karplus and Retzius that much more extensive and varied material (racial especially) is necessary (to say nothing of the question of individual variations) before a dogmatic position can be taken. Dr W. desires anatomical material of the kind in question.

Wide (S.) Chthonische und himmlische Götter. (A. f. Religsw., Leipzig, 1907, X, 257–268.) Treats of chthonic (earth) deities and their transformation into celestial ones, particularly among the peoples of the ancient world, a metamorphosis less known than the reverse

process. Chthonic deities are subterranean deities, but they are found also in the air (e. g. some of the wind-gods). The example of Hera as a chthonic deity passing over into a celestial one is discussed with some detail. Another instance is that of the Dioscuri. Under the influence of the Olympic religion a strong effort was made to raise the position of other chthonic deities as well; some of them spend part of their time above and part below. Wodan was originally an earth-god and a god of the dead made celestial under the influences of the Viking age.

Wintemberg (W. J.) Myths and fancies of the Milky Way. (J. Roy. Astron. Soc. Can., Toronto, 1908, 235–247.) Cites myth, legend, folk-lore and poetic ideas from all ages and peoples. The Milky Way is "mother of stars," star-dust (Peruvian); the belt of God (Lett); the lovers' bridge (Finnish); the crooked serpent (Hebrew); the long blue cloud-eating shark (Polynesian); bridge of Asgard (Norse); the path of God, of heroes, of spirits, etc. (with many widely scattered peoples); the way of birds (Finnish), the dog's trail (Kootenay and Cherokees), the wolf road (Blackfeet), the snake's path (N. India); the path of Noah's ark (Panjâbi), the pilgrims' path (Turkish), the way to Rome (medieval European), way of St James (European); Watling Street (early English), Winter Street (Swedish), and the street or path of divers saints, gods, heroes, etc., in European religions and mythologies; river of heaven, river of light, white river, etc., the heavenly Ganges (Hindu); the straw road (Arabic, etc.); the trail of the swimming turtle, the buffalo and horse racing, the snow-shoes of the creator, the road where the spirits hunt ostriches, etc. The term "Milky way" is ancient and widespread. Another curious belief is found in Theophrastus and Diodorus Siculus, viz. that "it was the junction between the two hemispheres, which together formed the vault of heaven: and it was so badly made that it let through some of the light supposed to exist everywhere behind the solid sky." The appellations of the "Milky Way" serve admirably to illustrate both the differences and the resemblances of thought among the races of man.

Zanolli (V.) Studio sulla obliterazione delle suture craniche. (A. d. Soc. Rom. di Anthrop., 1908, XIV, 13–44.) Résumés previous studies and gives details of own investigation of 25 male and 25 female Bolognese and 14 male and 6 female Paduan skulls in the Anatomical Laboratory of the University of Padua, with respect to obliteration of sutures. Dr Z. concludes that the sutural course is not as regular or as constant as certain authors hold; synostotic concomitants are very frequent; suturation is relatively precocious (at about 25 years) in man and late (at 30) in woman; the rhythm of the course of obliteration is more regular in woman; asymmetries of obliteration are frequent, but there is no relation between these and normal plagiocephaly.

EUROPE

Andree (R.) Jüdische Museen. (Globus, Brnschwg., 1907, XCII, 107–108.) Based on Dr S. Weissenberg's article in the *Mitteilungen zur jüdischen Volkskunde*, Heft 28, treating of Jewish antiquities and other objects in German Museum. The historical and cultural value of Jewish Museums is emphasized, i. e., of museums setting forth the cultural development and historical evolution of the Jews in Germany.

Baudouin (M.) La croix blanche des fermes du bocage vendéen B. Soc. d'Anthr. de Paris, 1908, Vᵉ s., IX, 42–77, 5 figs.) Treats in detail of the white cross painted on farm-houses in the wooded region of the Vendée,—in the plain and marshy country it is now rare,—its distribution, signification, variation in form, comparison with similar symbols elsewhere, etc. Dr B. believes this cross, now interpreted by the peasants as the Christian sign of the cross for protection against the devil, to be the Christianization of a prehistoric cult (all the intermediary stages between the typical prehistoric sculptures and the purest form of the cross are found), the intent being the same to-day as of yore, to protect agriculture against evil spirits. The white cross is confined to farm-houses, etc.

—— Fouille et restauration de l' allée couverte de Querellio à Saint-Mayeux, Côtes-du-Nord. (Ibid., 78–79.) Note on the restoration since 1906 of the megalithic monument of St Mayeux belonging to the close of the neolithic period.

Breuil (H.), **Peyrony** (D.) *et* **Bourinet** (J.) Concrétions avec contre-empreinte

des gravures de Teyjat. (Ibid., 6–8.) Brief account of stalagmitic concretions bearing imprints of cave-pictures (horse, etc.) from the prehistoric grotto of Teyjat, and of some retouched and replaced pieces of rock with engravings upon them (two human occupations are thus indicated and the antiquity of the earlier pictures proved beyond doubt). In the discussion M. Baudouin called attention to the fact that the pictured horse of the caves seems identical with the modern horse of the Ile d'Yeu, which by reason of environment, etc., seems to have reverted to the primitive type.

Capitan (L.), **Breuil** (H.), **Bourrinet** (J.) *et* **Peyrony** (D.). La grotte de la Mairie à Teyjat, Dordogne. Fouilles d'un gisement Magdalénien. (R. de l'Éc. d'Anthr. de Paris, 1908, XVIII, 153–173, 13 figs.) First part of a description of the Mairie grotto at Teyjat in the Dordogne, the contents of a Magdalenian stratum, etc. History, stratigraphy, fauna and flora, implements, etc., of stone, horn, ivory, bone, art-objects (conventional signs, animal figures, etc., on implements; heads of horses, figure of bison on stalagmitic fragment, figures of horses, etc.), ornaments (portion of *Pecten* shell pierced for suspension).

Coffin (M. C.) Where East meets West; a visit to picturesque Dalmatia, Montenegro, and Herzegovina. (Nat. Geogr. Mag., Wash., 1908, XIX, 309–344, 24 pl., 3 figs.) Notes on cities, costume, the lake of Scodra (Albanians, bazaar, medieval dress), Bosnian peasants, etc. Illustrations of ethnologic interest.

von Domaszewski (A.) Die Festcyclen des römischen Kalenders. (A. f. Religsw., Leipzig, 1907, X, 333–344.) Treats of the festival-cycles of the ancient Roman calendar,—around some one chief festival in each month were grouped the minor ones, all standing in certain relations to one another. The chief festival of August was the *Volcanalia* on the 23d, introduced by the *Consualia* of the 21st and ending with the *Opiconsivia* of the 25th. There were also the *Portunalia* of the 17th, the *Vinalia* of the 19th, and the *Volturnalia* of the 27th. The whole festival cycle was ruled by Vulcanus. The cycle of December was ruled by the deity of the germinating seed. March and April are dominated by generation, and the moving of life; and so on with others. The cycle of Roman festivals begins in December with the adoration of the power that renews life in the death of winter, passes life at its height in June, and in October with an attempt to ensure the well-being of the year to come.

Eichhorn (G.) Depotfund im Münchenrodaer Grund bei Jena. (Z. f. Ethnol., Berlin, 1908, XL, 194–200, 25 figs.) Describes find of bronze objects (sword, celt, armlet, bosses, rings, spirals, etc.) made in 1885 at Münchenroda near Jena, and now in the Germanic museum of the University.

Feilberg (H. F.) The corpse-door: a Danish survival. (Folk-Lore, Lond., 1907, XVIII, 364–375, 1 pl.) Treats of the custom (and its analogies elsewhere) formerly widespread in Denmark of having a door through which the corpse was carried out and which was afterward bricked up. Digging under the threshold, making a hole in the wall, etc., are some of the related practices intended to avoid carrying the dead through the usual entrance to the house in the hope of preventing the return of the ghost.

Fisher (E.) Ueber den Ursprung der rumänischen Bojarenfamilien. (Z. f. Ethnol., Berlin, 1908, XL, 343–361.) Treats particularly of the old Rumanian Bojar families, who are of Slavonic origin, those of Greek, German, Magyar descent being also briefly considered.

—— Die Haar- und Kleidertracht vorgeschichtlicher Karpâthen- und Balkanvölkschaften. (A. f. Anthr., Brnschwg., 1908, N. F., VII, 1–15, 2 pl., 11 figs.) Treats of the hair-dress and clothing of the prehistoric peoples of the Carpathian and Balkan countries. According to F. the modern Balkan peoples have preserved in their essential features the hair-dress and costume of their Thracian ancestors of Butmir, Jablanica, Adamklessi and Cucutenei, a further proof of the identity of these peoples with the prehistoric "Thracians," already demonstrated for certain aspects of architecture, art, music, custom, belief, etc.

Furtwängler (A.) Zwei griechische Terrakotten. (A. f. Religsw., Leipzig, 1907, X, 321–332, 2 pl.) Treats of two ancient Greek terracotta statuettes, one of them an old Ionic imitation or remodeling of the Egyptian idol of the embryo or infant type (Ptah-Sokaris, the Memphian god of the dead) the other an Attic representation of Silenus with an infant in his arms.

van Gennep (A.) Ein eigentümlicher Wettermantel als Zeuge alter kulturellen Beziehungen. (Globus Brnschwg., 1907, XCII, 150–152, 3 fgs.) Discusses the Portuguese and Provençal rain-mantle of straw and similar objects in Japan, China, the Philippines, the Pacific coast of Mexico, etc. V. G. raises the question whether the spread of this mantle is not due to the Portuguese. Another view brings it originally from China.

Giuffrida-Ruggeri (V.) Contributo all' antropologia fisica delle regioni dinariche e danubiane e dell' Asia anteriore. (A. p. l'Anthrop., Firenze, 1908, XXXVIII, 127–180, 1 pl., 2 fgs.) Treats of ancient and modern (Gothic, Croatian, Slavonian, Veneto-Illyrian, Dalmatian, Montenegrin, Albanian, Bosnian-Herzegovinian, Rumanian, Armenian, Maronite, Kurd, etc.) skulls from the Dinaric and Danubian regions and from Asia Minor (measurements of 60 Armenian, etc., skulls are given). The conclusions reached are: Ripley's identification of the Veneto-Illyrians with the Alpine type is incorrect, — the Illyrians were dolicho-mesocephals; the modern Greek and Balkan peoples are less brachycephalic than is generally supposed; Asia never sent brachycephals into the Danubian plain and the latter has never been the center of brachycephaly imagined by De Michelis, etc.; hypsiconchia, a character supposed to be peculiar to Asiatic skulls, no longer occurs in adjacent Rumania, a fact not favorable to the theory of brachycephalic transit from Asia to Europe. Pages 176–180 are taken up by an argument of Prof. C. Sergvic that the Croatians are wrongly considered Slavs, being really Avars.

v. Hahn (—) Nomina geographica Caucasica (Globus, Brnschwg., 1907, XCII, 127–130, 140–143). Discusses numerous geographical names of the Caucasus, their etymology, meanings, etc. These names represent ethnic and tribal history, migrations, intermixture (Kwemo-Schawalüt, e. g., is Grusinian-Tatar; besides the Caucasian peoples themselves, Armenian, Persian, Turkish, Hebrew, Greek, Latin and Italian influences are present); climate and natural conditions, the fauna and flora, the mineral realm, industries and occupations (also physical and moral characters of localities, — *blason populaire*), religion and older heathenism, legends, etc. Some of names of mountains and rivers are very interesting. Mt Elbruz has at least 10 names. To the Ossetes it is known as Tseristitsub, or "Christ Mountain," from the folk-belief that Christ once lived in one of its caves.

Henkel (L.) Die Gegend von Kösen. (Ibid., 293–296, 2 fgs.) Contains some notes on the presence of man from the later stone age down, archeological remains, etc.

Hertzog (A.) Schaustücke und Sammlungen im alten Strassburg. (Korr.-Bl. d. D. Ges. f. Anthr. Brnschwg., 1908, XXXIX, 1–5.) Notes on show objects, collections, etc., in old Strassburg: the "unicorn's horn" (first mentioned in a MS. of 1380), the "Kunstkammer" of the 16th century and other later collections of all sorts of relics, rarities, art-objects, etc.

Herzog (R.) Aus dem Asklepion von Kos. (A. f. Religsw., Leipzig, 1907, X, 201–228, 400–415, 1 pl.) Treats of the discovery of the Asklepion at Kos, the serpent-offering (the fourth *minus* of Herondas, the Koan temples, offerings to openings in the earth, Charon and Cerberus, serpent and dog), the worship of Demeter at Kos, etc.

Hollack (E.) Die Grabformen ostpreussischer Gräberfelder. (Z. f. Ethnol., Berlin, 1908, XL, 145–193.) Treats of the various forms of graves in East Prussia, — La Tène, the so-called Roman and post-Roman graves of the Masurian region and south Ermland, the graves of the central belt of the province, the graves of Samland. The graves of Samland indicate for the post-Christian centuries a constant specific Prussian population. The stone-protected graves of Samland and the region south of the Pregel are to be attributed to a Prusso-Lettish population. In Samland the graves yield evidences of 4 cultures: Early Roman with inhumation (corresponding to La Tène of the S. W. of the Province); full Roman culture with cremation; post-Roman with cremation; so-called "late-heathen."

Jaeger (J.) Das Gasteiner Tal. (Globus, Brnschwg., 1907, XCI, 373–378.) Contains some notes on the human occupants of Gastein valley, — Taurisci, Romans, Slavs, etc., the warm springs, etc.

Kaindl (R. F.) Zur Volkskunde der Rumänen in der Bukowina. (Ibid., 283–289.) Treats of folk-lore of the Bukovinian Rumanians. Cattle-charming, tree-sacrifice in house-building (village of Zurin), procedure to keep evil

and unclean things away from the house, omens of divers sorts, festivals and holidays, love-charms and marriage-oracles (with some detail), mother and child, devil born of an egg, moon-lore, cosmogonic and origin myths (horses, Jews, a brook, diamonds, etc.), legends (heraldic, place-names). In Rumanian "magic" figures "a dragon with golden scales and wings, with 99 heads, 99 eyes, 99 tongues and 99 feet." The first horses were two devils who lost their horns and were put to the plough by Adam.

Kauffmann (F.) Altgermanische Religion. (A. f. Religsw., Lpzg., 1907, XI, 105–126). Résumés and critiques of recent literature on old Teutonic religion: J. v. Negelein's *Germanische Mythologie* (Leipzig. 1906), E. Mogk's *Germanische Mythologie* (Leipzig, 1906), P. Herrmann's *Deutsche Mythologie* (2 Aufl., Leipzig, 1908), H. Schück's *Studier i nordisk Litteratur-och Religionshistoria* (2 v., Stockholm, 1904), K. Krohn's *Baldermythus* (Helsingfors, 1906), H. Brunner's *Deutsche Rechtsgeschichte* (Bd. I., Leipzig, 1906), and many articles in periodicals.

von Komorowicz (M.) Ein Ritt durch Island. (Globus, Brnschwg., 1907, XCII, 373–377.) Notes from journey in 1907 on bird-hunting, etc.

Laville (A.) Présentation d'une râpe angulaire néolithique. (B. Soc. d'Anthr., de Paris, 1908, V^e^ S., IX, 22–26.) Discusses an angular neolithic rasper or grater (for use on wood, etc.) found in the Dunois in 1907. With such implements wood could be cut easily.

M. (L.) La couleur des cheveux et des yeux en Écosse. (R. de l'Éc. d'Anthr., de Paris, 1908, XVIII, 276-280.) Résumés monograph of Gray and Tocher in *J. R. Anthr. Inst. Vol. XXXVII* on the color of hair and eyes in Scotland.

——. Les cheveux roux. (Ibid., 280–281.) Résumés article of Prof. E. Dubois on redhairedness, etc., in *Man* for June, 1908.

Mehlis (C.) Diluviale Funde von Neustadt an der Haardt. (A. f. Anthrop., Brnschwg., 1908, N. F., VII, 72–74, 3 fgs.) Brief account of diluvial bones of animals from Neustadt on the Haardt, discovered in 1901. Among these are pieces of reindeer bone and horn with incisions and other marks of human origin. These are probably the oldest relics of diluvial man in the Rhine country.

Moriz von Déchy Forschungen im Kaukasus. (Globus, Brnschwg., 1907, XCII, 296–301, 7 fgs.) Résumé and review of Moriz von Déchy's *Kaukasus, Reisen und Forschungen im Kaukasischen Hochgebirg* (3 Bde. Berlin, 1905–1907). V. Déchy visited the Lesghian Kurinians, who number about 130,000. The mosque of Ichrek is said to date from 1029 A.D.

de Mortillet (A.) Les pierres à fusil, leur fabrication en Loir-et-Cher. (R. de l'Éc. d'Anthr. de Paris, 1908, XVIII, 262–266, 6 fgs.) Brief account of the manufacture (now for export) of gun-flints at St. Aignau, in the department of Loir-et-Cher. There were 37 different types made at different prices per thousand in 1865, at present only 13.

Mühlhofer (F.) Ueber knochenführende Diluvialschichten des Triester Karstes und Karstentwaldung. (Globus, Brnschwg., 1907, XCII, 109–111, 3 fgs.) Treats of the bone-bearing strata, the paleolithic and neolithic artefacts of the "Red field" cave in the Karst of Trieste, etc. Two ice-periods, an interglacial and a post-glacial are distinguished. Evidence of man's presence is met with in the first interglacial. The deforestation of much of the Karst may have been due to the Romans.

Neger (F. W.) Im Reich der Pinsapotanne und der Korkeiche. (Ibid., 309–314, 5 fgs.) Describes the region of the *pinsapo*-fir and the cork-oak in Andalusia and the utilization of these trees.

Osthoff (H.) Etymologische Beiträge zur Mythologie und Religionsgeschichte. (A. f. Religsw., Lpzg., 1907, XI, 44–74.) Discusses the etymology and significance of *Iris*, the Greek name of the messenger of the gods, the terms for "rainbow," "sun drawing water," "Milky Way," etc., in the various Indo-European tongues, particularly Greek and Latin. According to O., the goddess Iris was the path-walker, *viatrix*, the carrier of messages from gods to gods, between sky and earth, from one end of the world to the other. Later on, through folk-etymology, she was identified with the rainbow.

Patiri (G.) Le mura e le costruzioni ciclopiche della contrada Cortevecchia, in Termine Imerese. (A. p. l'Anthrop., Firenze, 1908, XXXVIII, 17–22, 1 pl.) Treats briefly of walls and other cyclopean structures in the Cortevecchia region, Termine Imerese, including a

small dolmen and the cyclopean wall inside the Cave of the Dragon.

Pekokultus (Der) bei den Setukesen. (Globus, Brnschwg., 1907, XCII, 191.) Based on M. J. Eisen's article in the *Finnisch-Ugrische Forschungen* for 1906. Peko is the deity of agriculture and cattle-breeding and his cult is more extensive among the Setukeses than among the Karelians.

Perko (G. A.) Aus der Unterwelt des Karstes. (Ibid., 359–365, 377–383, 4 figs.) Treats of the caves of Bresovizza, Slivno and Nabresina, — those of the last two regions contain animal remains and human artefacts, etc. The Moser cave yielded a human skeleton with grave-gifts, flints, weapons of bone, etc. The man of these caves was a nomadic hunter, changing later on to sedentary life (pastoral and fishing), with culture like that elsewhere in Europe of the period.

Pittard (E.) Ossements utilisés (diaphyses) de la période moustérienne, station des Rebières, Ourbières, Dordogne. (R. de l'Éc. d'Anthr. de Paris, 1908, XVIII, 255–261, 5 figs.) Treats of certain animal bones bearing marks of use, cuts, etc., of human origin from the Mousterian period at the "station" of Rebières in the Dordogne. The purpose for which they were employed is not clear.

Reche (O.) Zur Anthropologie der jüngeren Steinzeit in Schlesien und Böhmen. (A. f. Anthrop., Brnschwg., 1908, N. F., VII, 220–231, 1 pl., 5 figs.) Treats of anthropological types in the later stone age in Silesia and Bohemia, — in the "Schnurkeramik" and the "Band-keramik" periods and the transitional epoch. Some 90 skulls and skeletons were studied (detailed measurements) and two distinct types, one meso-brachycephalic, the other dolicho-hyperdolichocephalic, the second being identical with the North European or Nordic race. In the course of the stone age a change in race took place, the type of the North European race (bringing with it the "Schnur-keramik") suppressed the other type (brachycephalic), and married the women of the stock, producing thus a mixed race. The second type appears to have had no culture-creative rôle, the Nordic type being the carriers of both cultures, "Schnur" and "Band-keramik."

Samter (E.) Der Ursprung des Larenkultus. (A. f. Religsw., Leipzig, X, 368–392.) Discusses the origin of the Roman cult of the *Lares*, the theories of Wissowa in particular. The terms *compitum* and *Lares* the considered; also the doll-offerings, dress, participation of slaves in the *compitalia*, etc. Against Wissowa's contention, that the *Lares* are protective deities of the soil, S. holds that they represent the cult of ancestors and souls.

Schmidt (R. R.) Die neuen paläolithischen Kulturstätten der Schwäbischen Alb. (A. f. Anthrop., Brnschwg., 1908, N. F. VII, 62–71, 31 figs.) Treats briefly of the new paleolithic "stations" in Swabia, discussed in detail in Prof. E. Koken and Dr R. R. Schmidt's recent work *Die diluvialen Kulturstätten Deutschlands*. Very important is the Sirgenstein cave in the valley of the Ach, where the Mousterian, Aurignacian, Solutrean, Magdalenian are all represented. The Hohlefels cave near Hütten exhibits a later Magdalenian epoch. The paleoliths of the Swabian Alb represent the same stages as those to the East and West. With the appearance of the last glacial period man began to spread over south Germany, the highlands of that region being then for the first time inhabited.

Schnippel (E.) Die oberländische Haube, genannt "das Mützchen." (Globus, Brnschwg., 1907, 238–240, 1 fg.) Describes the cap called Mützchen used in the Prussian Oberland within a generation, and the dress corresponding. Similar caps were formerly known in parts of Magdeburg, Thuringia, and the modern nurse's cap resembles the Mützchen much. Its origin is possibly due to the old Dutch settlements in this region.

Seidel (H.) Bemerkungen zu den neueren Karten des Hohen Tatra. (Ibid., 152–154.) Contains some notes on place-names, etc., in the Tatra region of the Carpathians.

v. Seidlitz (N.) Kaukasische Sprichwörter und Redeweisen. (Ibid., 143–145.) German versions (translated from the Tiflis Calendar for 1907) of 150 Tatar, 53 Armenian, 32 Georgian, 16 Lesghian, 13 Avar, 21 Kasikumuk, 10 Akusha, 4 Daghestan, 3 Tchetchenian and 1 Circassian proverbs and folk-sayings including a number of riddles. Characteristic are the following: While the wise man is thinking of getting married, the fool has a son born to him

(Tatar); the world is a fat sheep's-tail, man a knife (Armenian); the guest is gold in the morning, silver in the evening, and two days later iron (Georgian); who never saw hell will not be suited with paradise (Lesghian); love the shepherd, love his dog (Avar); of what use is a fair woman to a blind man? (Kasikumuk); who sleeps in spring-time weeps in winter (Akusha).

Siebourg (M.) Neue Goldblättchen mit griechischen Aufschriften. (A. f. Religsw., Leipzig, 1907, X, 393–399.) Describes 3 gold tanias with Greek inscriptions (2 from Jerusalem, 1 from Rome). The inscription on one is interesting by reason of the "Abba, Father" (cf. Mark XIV, 36).

Sittoni (G.) Le cinque terre: III. I Biassèo-Campioti. Le doti naturali. (A. p. l'Antrop., Firenze, 1908, XXXVIII, 23–35, 1 pl.) Treats of the natural gifts and mental characteristics of the people of the region of Biassa, customs and habits, dress, ornament, etc. One marked trait is continuous litigation; theft and dissimulation are others. Knowledge is chiefly tenacious tradition.

Tetzner (F.) Die istrischen Slawen. (Globus, Brnschwg., 1907, XCII, 85–89.) Treats of the Slavs of Istria (Slovenians and Istrian Serbo-Croatians), their habitat, physical characters, activities and occupations, festivals and ceremonies, dress and ornament, marriage-customs (with some detail), funerals, folk-song, etc.

Vauville (D.) Instruments en forme de scie du gisement quaternaire de Cœuvres, Aisne. (B. Soc. d'Anthr. de Paris, 1908, V° S., IX, 29–30.) Describes saw-shape implements from the quaternary site of Cœuvres in the department of Aisne; in all 167 specimens were found, belonging probably to the close of the Achulean epoch.

Wagner (M. L.) Sulcis und Iglesiente. Ein Reisebild aus Sardinien. (Globus, Brnschwg., 1907, XCII, 4–11, 9 fgs.) Account of visit in the spring of 1905 to the Sulcis and Iglesias region of southwestern Sardinia. The ruins of Nora (according to Pausanias, the oldest city of the island), the villages of Domus de Maria, Teulàda (with its ethnically isolated "Maureddus," of Moorish lineage), Carloforte (with a large Genoese element), tunny-fishing, the cave of Domusnovas and the *nuraghe*, at the same place, are described.

AFRICA

Avelot (R.) Le ouri. Un jeu africain à combinaisons mathématiques. (B. Soc. d'Anthr. de Paris, 1908, V° S., IX, 9–22.) Treats in detail of *uri*, an African game with mathematical combinations, the nature and distribution in Africa (map) of the three species of dish-games, *tshela*, *tab*, *uri*, their migration, etc. The game of *uri* is African, having had its origin among some Hamitic people in the neighborhood of Ethiopia and having spread in four directions,—by way of the Fulas to the north Sahara, Senegambia and Guinea to the Gaboon; by way of Nubian slave-traders down the Nile; through the Jaggas to Angola; by some Negro-Hamitic tribe south to Manica. The so-called cup-stones have nothing to do with the game.

Bieber (F. J.) Das Recht der Kaffitcho. (Globus, Brnschwg., 1907, XCII, 365–367.) Treats of law and legal ideas and institutions among the Kaffitcho, a Hamitic people of the Abyssinian highlands,—judges, formulae, courts, ordeals, inheritance laws, marriage, crimes and punishments, appeals to emperor, etc. Many aboriginal (non-Abyssinian) ideas have developed in Kaffitcho law.

Brussaux (E.) Notes sur la race Baya. (B. Soc. d'Anthr. de Paris, 1908, V° S., IX, 80–102, 1 pl.) Treats of habitat, climate, physical type and general culture (mountaineers, hunters, northern type still savage, southern influenced by Fulas and Haussas with Sudanese culture and Mahometanism; no system of writing), tattooing and mutilation, dress and ornament (head-dress complicated), family and domestic life, religion and superstition (in transition from heathenism to Mahometanism), houses, furniture, implements, villages, plantations, domestic animals (sheep, goats, dogs, fowl), food (manioc chief basis), hunting and fishing (poor fishermen, good hunters), industries (iron; pottery by women; basketry, etc.), dance and music, weapons, political organization (unit is circle headed by family chief), etc. Among the Bayas exists the institution of the Labbis, a sort of embryo university, in every large village.

Dar Homr. (Globus, Brnschwg., 1907, XCII, 15–16.) Notes on Dar Homr (S.W. Kordofan) and its people. Based on Capt. W. Lloyd's account of his visit (1904–1906) in the *Geographical Journal* for June 1907.

Goldstein (F.) Thesaurierungspolitik der Saharabevölkerung. (Ibid., 379–384.) Treats of the camel in the economic life, etc., of the peoples of the Sahara (Tuareg) as compared with cattle in that of the Negro tribes. The camel is the "ship-of-the-desert," food (rare), bride-price, property and cause of raids, the highest gift, the measure of wealth, the theme of proverb, song, etc.

—— Die Saharastädte Rhat und Agades. (Ibid., 171–175, 186–188.) Describes Rhat, a marabout town in the Tuareg Sahara and Agades the capital of the Tuareg tribe of Air or Asben (once credited with over 50,000 inhabitants, now perhaps 4,000), their people, industries, etc.

Gutmann (—) Die Frau bei den Wadschagga. (Ibid., 1–4, 29–32, 49–51.) Details concerning women, their life, activities, etc., among the Wadjagga, a primitive negro people of East Africa. Birth and treatment of girls, games, courting, marriage and domestic life, polygamy and inter-conjugal jealousy, divorce, bride-purchase, legal standing of women, position in religion (higher than socially; several sorts of shamans, "witches," etc.), women in trade and market-life (the market is the center of activity), men's opinion of women, etc.

—— Wahrsagen und Traumdeuten bei den Wadschagga. (Ibid., 166–167.) Treats of the shaman ("prophet" "magician") and the varieties of his *modi operandi*,—water-seeing, earth-knocking, tobacco-shaking, pebble-counting, dreaming (some details), etc. The efforts of the *vaanga vailafya* or soothsayers are directed toward knowing the spirits and their wishes. Genius in soothsaying skips a generation according to the Wajagga.

In the valley of the Niger. (Nat. Geogr. Mag., Wash., 1908, XIX, 164, 2 pl., 1 fg.) Illustrations of ethnologic interest (granary, burnt clay walls of hut with animal figures, etc., native types), furnished by "La Société d'Études Coloniales de Belgique."

Karutz (R.) Tatauiermuster aus Tunis. (A. f. Anthrop., Brnschwg., 1908, N. F., VII, 51–61, 38 fgs.) Treats of tattoo-patterns from Tunis, particularly those of a tattooing-book obtained by the author in 1906 in Kairouan, with account of the process of tattooing and notes on the various figures. K. believes that tattooing is basally an ornamental art, all religious, social and personal elements having been secondary, but in itself is not of esthetic origin. Tattooing goes back to the treatment of wounds and scars by rubbing in soot, ashes, drawing thread through the opening made by a needle, etc., — cf. the medical "hair-rope." Out of this came rubbing color-substances and finally the process of tattooing as we have it.

—— Nach den Höhlenstädten Südtunisiens. (Globus, Brnschwg., 1907, XCII, 117–123, 133–140, 201–205, 215–218, 229–236, 50 fgs.) Describes visit in 1906 to the "cave-cities," etc., of Southern Tunis,—Bon Amran, Matmata, Médenine, Douirat, Chenini, Germersa, — architecture, implements, furniture, character of cave-dwellings, origin, notes on the people (mostly Berber in the midst of Araboid nomads), their family-life, customs, industries, etc., with some account of the surrounding population. Some of these caves are quite modern and due to their present possessors. The explanation of their use ("they are cool in summer and warm in winter") given by the troglodytes of Toujane, indicates a climatic reason for their existence. The natural caves have often been abandoned for artificial ones possessing greater advantages. Their form does not justify the refuge or defense theory.

Klose (H.) Die Behandlung Eingeborener im Hinblick auf unser Kolonisationswerk. (Ibid., 316–320.) Discusses the treatment of African aborigines in relation to German colonization, the use of native troops, police, etc. Justice, respect for native sanctuaries, knowledge of political and social conditions, tact, industrial and economic education are necessary.

Koch (R.) Anthropologische Beobachtungen gelegentlich einer Expedition an den Viktoria-Nyanza (Z. f. Ethnol., Berlin, 1908, XL, 449–470, 1 pl., 18 fgs.) Gives the results of observations made during a stay of a year and a half on the Victoria Nyanza, chiefly in the Sesse islands at the N.W. corner of the lake, among Bantu peoples. Physical characters, food (meat not despised; banana chief source of food; several insects eaten), houses, boats (one type exceedingly primitive), clothing (bark, cotton), forms of greeting for men and women, diseases (no cry or lamentation by the sick), and their treatment, rock paintings and drawings, narcotics, etc.

The paintings are in red. The Sesse natives have trypanosomes long before they exhibit symptoms of the sleeping sickness.

Krauss (H.) Tierfang bei den Wasaramo. (Globus, Brnschwg., 1907, XCII, 338–339, 9 fgs.) Brief account of methods of trapping and capturing birds and animals among the Wasaramo negroes of East Africa, lime-twigs, snares, nets, fall-traps, pits, etc. Monkeys are hunted by aid of a dog from whose neck is hung a bell.

—— Spielzeug der Suahelikinder. (Ibid., 357–359, 8 fgs.) Treats of children's playthings among the Suaheli of E. Africa (parental love is great), mostly imitations or miniatures of instruments, implements, etc., with which the adults have to do, — drums, boats, traps, scarecrows and noise-makers, musical instruments, dolls, etc.

—— Lufambo. (Ibid., 221–222, 9 fgs.) Describes and figures 9 varieties of the string-game *lufambo* from the Wakami of German East Africa.

Kürchhoff (D.) Maase und Gewichte in Afrika. (Z. f. Ethnol., Berlin, 1908, XL, 289–342.) Detailed account of weights and measures in Africa civilized and uncivilized, heathen, Mahometan and Christian. The units, multiples, correspondences, etc., are discussed; Asiatic and European influences noted. Weights are of gold, lead, iron, copper; the distribution of the use of scales is indicated, native and foreign. The native names for weights and measures in many tongues are listed. Among the Wolof the metric terms (introduced by the French), — *metar*, *santimetar*, etc., are now known.

Land (**Das**) zwischen Kanem und Borku nach Kap. Mangin. (Globus, Brnschwg, 1907, XCII, 11–12). Contains a few notes on the native population, Tedas (of Tibbu stock) of Borku and Dasa (also Tibbu) of Shittati. The Teda rank women high and are mostly monogamous. Based on Capt. Mangin's recent researches.

Marquardsen (*Hptm.*) Beobachtungen über die Heiden in nördlichem Adamaua. (Ibid., 197–201, 3 fgs., map.) Notes on the pre-Mohammedan population of northern Adamaua (the Islamic Fulla began their invasion in the beginning of the 19th century), occupying the mountain regions, etc., — Batta tribes, Falli, Mundang, Margi, Gamergu, Musgu, etc. The map shows the distribution of heathen and Islamised peoples. The change of this heathen population can be made but gradually; their industry insures a good futue for them.

de Morgan (H.) Notes sur les stations quaternaires et sur l'âge du cuivre en Egypte. (R. de l'Éc. d'Anthr. de Paris, 1908, XVIII, 133–149, 19 fgs.) Treats of the "stations" in the region of Esneh and the implements of paleolithic type (quaternary) in that part of Egypt, the paleolithic culture, passing from Assuan to the Delta with 3 types of burial, cist graves, knee-elbow inhumation, graves with burnt offerings, grave pottery, etc. Also copper objects (hatchet, chisel, etc.) from the kitchen-middens of Adimieh. de M. believes that in Egypt the bronze age has been preceded by a copper age. The axe of Adimieh has been copied from one of stone. Certain engraved stone cylinders belong to the same period, comparable with others from Thebes, Negadah, etc. The finds at Adimieh and Esneh are of great importance.

Neuere Erfolge ägyptischer Augrabungen. (Globus, Brnschwg., 1907, XCII, 314–315.) Based on an article in *Nature* (London), vol. 76.

Raum (J.) Blut- und Speichelbünde bei den Wadschagga. (A. f. Religsw., Leipzig, 1907, X, 269–294.) Treats of blood and spittle covenants among the Wajagga, a mountain people of the Kilimandjaro region. The more important "blood covenant" is described in detail; the spittle-covenant is performed by the two parties alone, as the other, now more ceremonially developed, once was also. Private individuals need the consent of the chief for these covenants, which are now in use as public ceremonies only for the forming of political alliances, peace-treaties, etc.

Sergi (G.) Sulla morfologia del cervello degli Herero. (A. d. Soc. Rom. di Antrop., 1908, XIV, 71–74, 2 fg.) Résumés investigations of 11 male and 3 female brains of the Herero (Bantu) of South Africa. The Herero brain differs from the European in the predominance of simple forms of the posterior termination of the fissure of Silvius, greater division of the superior and inferior frontal sulci, greater frequency of the first variety (Cunningham) of the intraparietal system, etc. The details will be published in S.'s forthcoming monograph *Cerebra Hererica*.

Smend (*Obleut.*) Eine Reise durch die Nordostecke von Togo. (Globus, Brnschwg., 1907, XCII, 245–250, 265–269, 26 figs.) Account of journey in January, 1905, through the N. W. corner of Togoland, with notes on the native tribes (Kábure who speak aTim dialect, — tattooing, salt ovens, markets, mud-houses, social organization; Losso, originally a mountain-people; Difale, also Tim linguistically, —dances, funerals, etc.; Ssola, — special tattooing, and separate language, platform-huts; Tamberna, — good-natured) etc.

—— Herstelluug von Messingperlen bei den Ewhe. (Ibid., 315–316, 7 figs.) Brief account of the manufacture of four sorts of brass beads by the Ewe negroes of West Africa, and industry said to have been introduced a generation ago from the Gold Coast.

Spiess (C.) Ein Erinnerungsblatt an die Tage des Sklavenhandels in Westafrika. (Ibid., 205–208, 1 fg.) Notes on the slave-trade as carried on in Keta and the surrounding country before the ban of 100 years ago and later, when it lingered on the Slave Coast the longest. The first gold-dust and the first 10 black slaves were taken from W. Africa by the Portuguese in 1442. By 1790 the Slave-trade handled 74,000 blacks in one year. Numerous "forts" (really slave-stations) were established by the Portuguese, Dutch, English, Danes, etc., one of the most famous being Nodza, near Keta.

Struck (B.) Pockenschutzmittel der Gäer, Goldküste. (Ibid., 149–150.) Treats of the preventatives against small-pox in use among the Gã negroes of the Gold Coast; watching and setting traps against the pox-spirit, sacrifice of cocks, leaving the paths leading to the village uncleaned, shooting off gunpowder, etc., besides numerous other devices, such as individual amulets and the like.

Tessmann (G.) Drei Mabeamärchen. (Ibid., 75–78.) Gives German texts with commentary of three tales of the Mabea, a small tribe of the south Cameroon country: Goatbreeding (one cannot serve two masters), the palm-rat and the hedgehog (effect of shame), the dog and his uncle (how dog lost power of speech).

Zenghelis (C.) Das Metall der alten Prägestempel. (Chem. Ztg., Cöthen, 1907, XXXI, 1116–1117, 2 figs.) Gives result of Dr Z.'s analysis of an ancient Egyptian (430–322 B. C.) bronze die from Tel El Athrib. The combination 69.85 per cent. copper, 22.51 per cent. tin, 7.64 per cent. oxygen. The character of these dies indicates a high development of chemical and technical metallurgy in ancient times.

ASIA

A. Khasi in Assam. (Globus, Brnschwg., 1907, XCI, 384–386, 1 fg.) Résumé and critique of Maj. P. R. T. Gurdon's *The Khasis* (London, 1907). The Khasi in their social organization "offer the best example of the matriarchate."

Belhomme (R.) Siamese Medicine. (J. Siam Soc., Bangkok, 1907, IV, Pt. i, 17–22.) Cites numerous folk-remedies and treatments of diseases among the Thos (a Thai people) from E. Lunet de Lajonquière's *Ethnographie du Tonkin Septentrional*. See *Beyer* (C.).

Beyer (C.) About Siamese medicine. (Ibid., 1–9.) Siamese medicine is of Indian origin, having, according to tradition, been first taught by Komarabhacca, a contemporary of Buddha. It has no knowledge of anatomy and physiology, and little of obstetrics. The *mohs* or doctors are of two classes,—*moh luang* (royal physicians) and *moh ratsadon*, *moh tjalõi* ("physicians of the people," — the second class being innumerable, "as nearly every Siamese believes he knows something of the art of healing, but he exchanges his profession easily with another one." The subject has been discussed at length by Dr Bradley in the *Bangkok Calendar* for 1865. See *Belhomme* (R.).

Bonifacy (—) Contribution à l'étude des différentes colorations de la peau, des muqueuses et de la conjunctive, chez les Annamites. (B. Soc. d' Anthr. de Paris, 1908, V^e^ S., IX, 31–36.) Gives results of examination of 525 Annamites aged 23–40 and 192 aged 21–28, soldiers and recruits, for skin, mucous and conjunctive coloration. Of the former 71.62 and of the taller 36.46 per cent., presented some pigmentation, the order of frequency being, blue-gray on part of lips, yellow coloration of conjunctive, "white line of abdomen, strong pigmentation of genital points." "Blue spots" were found in 50 of 110 children examined, the highest percentage, 68.75 per cent., in those a year old, the lowest, 29.41 per cent., in those over 4 years. Of 115 recruits accepted (average age 23½ years) the average height was

1587 mm., chest-girth 792 mm., weight 51.3 kg.

Brandenburg (E.) Ueber Grabsteinmuster in Anatolien. (Z. f. Ethnol., Berlin, 1908, XL, 201–202, 11 figs.) Brief account of grave-stones and ornaments from Kizilbash villages of Japuldag, etc.

—— Ueber neue Grottenfunde in Phrygien. (Ibid., 382–385, 11 figs.) Treats of the caves of In-Bazar in Phrygia, visited in the summer of 1907, their contents, etc. In-Bazar seems to have been a cult-center of some sort, judging by the remains found and not a fortified place.

de Brion (H.) A India Portugueza. (Soc. de Geogr. de Lisboa, 1908, Repr., 1–30, 11 figs.) Treats of Portuguese India, past and present, its native and European population, castes, religions, etc.

Caland (W.) Indische Religion 1904–1906. (Ibid., 127–141.) Reviews and critiques of W. Caland and V. Henry's. *Agnistoma* (2 v. Paris, 1906–1907), J. Scheftelowitz's *Die Apokryphen des Rgveda* (Berlin, 1907), H. Oldenberg's *Vedaforschung* (Stuttgart, 1905), O. Strauss's *Brhspati im Veda* (Leipzig, 1905), J. N. Reuter's *The śrauta-sutra of Drâhyâyana* (London, 1904), d. Gaastra's *Het Jaiminiyaśrautasûtra* (Leiden, 1906), Whitney and Lanman's *Atharva-veda samhitâ* (Cambridge, 1905), J. Richter's *Indische Missionsgeschichte* (Gütersloh, 1906), A. J. Edmunds' *Buddhist and Christian Gospels* (3d Ed. Tokio, 1905) etc.; also notes on the periodical literature of this period relating to the religions of India.

Chandler (J. S.) The Madura temples (Nat. Geogr. Mag., Wash., 1908, XIX, 218–222, 3 pl., 1 fg.) Brief descriptions of the golden lily tank, the raft tank and the great palace built by Tirumala (1623–1659), the greatest of the Nayakars, the last Hindu dynasty of southern India.

Crasselt (F.) Japanische Erziehungsgrundsätze in Schrift und Praxis. (Globus, Brnschwg., 1907, XCII, 37–40, 78–81, 90–94, 15 figs.). The principles of Japanese education are: Obedience (children to parents unconditional, wife to husband, etc.), parental love, etc.; loyalty to the Mikado and the empire (almost worship and deification). The course of education, the use of tales and legends to these ends are indicated.

—— Japanische Schrift und Sprache und der japanische Unterricht darin. (Ibid., 251–256, 8 figs.) Treats of Japanese writing system and the instruction given therein (for almost every Japanese word there is a special symbol borrowed from Chinese; these signs were introdnced about 285 A.D., — with the then current pronunciation, — by a Corean embassy; the educated Chinese can communicate in writing, but not orally, with the educated Japanese, almost every Japanese word having also a Chinese equivalent). The method of learning the signs is indicated and the differences between the ancient Chinese, the printed and the "cursive" symbols explained, the Katakana and Hirayana alphabets, etc. Besides all these, the differences of vocabulary, pronunciation, etc., in the conversational, customary, educated, courtly, literary and correspondence forms of speech have to be met by the foreigner who wishes to learn Japanese. Examples from the primers in use are given.

Cresson (W. P.) Persia: the awakening East. (Nat. Geogr. Mag., Wash., 1908, XIX, 356–384, 22 pl., map.) Abstract from author's book with same title, just published (Phila., 1908. Pp. 300). Illustrations are of ethnologic interest. Notes on workmen of Baku, city of Teheran, bazaars, etc.

De Forest (J. H.) Why Nik-Ko is beautiful. (Ibid., 300–308, 4 pl., 3 fg.) Contains some references to the temples and mausoleums at Nik Ko, "a great national center of religion and reverence in an environment of marvelous beauty."

Fischer (A.) Ueber Neuerwerbungen aus China. (Z. f. Ethnol., Berlin, 1908, XL, 447–448.) Notes on stone-sculptures of the Han period, a bronze sacrificial lamp in the form of a goose from the Shang dynasty (1766–1122 B. C.), a painting from Turfan dating from the Tang dynasty (618–967 A. D.), etc.

Frankfurter (O.) The romanizing of Siamese. (J. Siam Soc., Bangkok, 1907, IV, pt. i, 28-32.) A plan for romanizing the Siamese language, reprinted from a pamphlet compiled by the American Missionaries in Siam in 1842.

Fritsch (G.) Ein Besuch auf den Andamanen. (Globus, Brnschwg., 1907, XCII, 181–186, 5 figs.) Account of recent visit of author to the Andaman Is. and the natives (there is also a penal colony of 14,000 prisoners from all parts of India). Dr F. considers the Andaman aborigines "decidedly Nigritic (the Nicobar natives are "Indo-Chinese *métis*). The Andaman women wear a

"fig-leaf." At the time of the author's visit there lived a *mètis* (English father, Andamanese mother), a girl of four years, physical sound, with darkish-brown skin and the hair of a mulatto.

Gressmann (H.) Mythische Reste in der Paradieserzählung. (A. f. Religsw., Leipzig, 1907, X, 345–367.) Discusses the mythic elements in the account of Paradise in the book of Genesis: Geography (proper names may have been merely Hebraicized), nature of Paradise (the tradition of the garden is poor and imperfect in Genesis, but other texts in the Bible, etc., indicate richer lore concerning it), the fall of man (here the narration is much changed and interfered with), Eve and the serpent (the serpent was originally a serpent-demon; Eve and the serpent were originally one and the same; she was the goddess of life in the under-world), Adam (replaces a mythic figure; the rib-creation of woman goes back to Babylonian myth), etc. G. concludes that the account of Paradise came to the Canaanites from Mesopotamia by way of Phenicia, the departure from Mesopotamia dating from about 1300 B. C.

Holtzmann (O.) Religionsgeschichtliches aus den Monumenta Judaica. (A. f. Religsw., Leipzig, 1907, X, 485–509.) Treats of the data for the history of religion contained in the *Monumenta Judaica* (*Bibliotheca Targumica* and *Monumenta Talmudica*) of Altschüler, Neumann, Wünsche, Hollitscher, etc. The question of oral tradition among the Jews, the Jewish parable, etc., are discussed.

Huntington (E.) Medieval tales of the Lop basin in Central Asia. (Nat. Geogr. Mag., Wash., 1908, XIX, 288–295, 4 pl., 1 fg.) Abstract of address before National Geographical Society, — further details in the author's *The Pulse of Asia* (N. Y., 1907). According to H., "In the Middle Ages Chaucer and his predecessors seem to have known as much about that region as the average man knows today,"—he mentions "the Drye See" and "the Carrenare" (i. e., Kara-Nor). Illustrations of ethnologic interest.

Maurer (F.) Das Erdrecht im Alten und Neuen Testament. (Globus, Brnschwg., 1907, XCII, 59–60.) Cites data from the Bible indicating the relation of man to the earth and the earth to man, earth-taboo of Canaan as Jahve's property, earth-cult, earth as abode of spirits, earth-ordeal, earth as protector of man, etc.

—— Der Phallusdienst bei den Israeliten und Babyloniern. (Ibid., 256–258.) Cites data from the Old Testament (Noah's "nakedness," penis-taboo, phallus in mourning ceremonies, temple-prostitution of women, etc.), and the Babylonian documents (laws of Hammurabi, phallus-cult of Istar-prostitutes, etc.) concerning the phallus-cult among the ancient Israelites and Babylonians. According to Dr M. this cult goes back into the third millenium B. C., or farther still.

Meer-Zigeuner (Die) der Mergui-Inseln. (Ibid., 289–296.) Brief account of the Selung of the Mergui islands. Based on the article of R. N. R. Brown in the *Scottish Geographical Magazine* for September, 1907. They still number 800 or 900.

Meltzer (H.) Zentralasiatischer Aberglaube. (A. f. Religsw., Leipzig, 1907, X, 311–314.) Cites data from F. von Schwarz's recent (Berlin, 1900) book on Turkestan illustrated the survival of old religious and superstitious ideas, etc., in Central Asia,—e. g., the shamanism of the Kirghiz Cossacks, the "saints" of the Mohammedans, which include Alexander the Great, Tamerlane, etc., the use of amulets, tree-worship, etc. The Kirghiz Cossacks are noteworthy because they have been subject in whole or in part to three great religions,—Buddhism, Islam and Christianity.

Münsterberg (O.) Ueber den Einfluss Westasiens auf ostasiatische Kunst vorchristlicher Zeit. (Z. f. Ethn., Berlin, 1908, XL, 257-262.) Treats of the influence of western Asia upon eastern Asiatic art in the pre-Christian period. M. seeks to show in Japanese and Chinese culture evidence of pre-Mycenean migration (Caucasoid Ainu and the stone-age pottery, ornamentation, etc.). Mycenean bronze art and culture ornamentation etc., in the second millennium B. C., in China, with renaissance under the Han dynasty in the second century B. C. (also Graeco-Bactrian influences; Malay influences in Japan, —previously touched by early Greek colonies in India, or due to direct Cyprian transfer of Aegean culture to Malay Japan. The Gandhara Greek influence and the Turkestan art of the period from the fourth to the eighth centuries A. D., built up on the ruins of

Greek culture are also noted. Some of M. views are still quite hazardous, especially that concerning the importance of Malay culture in Japan.

Nagel (A.) Der chinesische Küchengott, Tsau-kyun. (A. f. Religsw., Lpzg., 1907, XI, 23–43.) Treats of Tsau-kyun, the kitchen-god or "hearth-prince," one of the oldest and best-known folk-deities of Chinese pantheon. Name and origin (various explanatory legends), religious significance (god of the hearth, family, home life; festival and offerings), etc. He resembles Agni of the Aryan Vedas, god of fire, and is a messenger of heaven; other points of resemblance with Agni are noted. Transference of religious ideas is suggested by N.

d'Ollone's Forschungen über den Lolo. (Globus, Brnschwg., 1907, XCII, 384–385.) Based on Capt. d'Ollone's account of his visit in the spring of 1907 to the Lolos of S.W. China (Yunnan and Szechwan) in *La Géographie* (Paris) for October, 1907. The political and social organization of the Lolo, according to d'O., "resembles that of Gaul in the time of the first Frankish kings." He obtained a number of Lolo MSS.

Saad (L.) Die Ausgrabungen in Gezer in Palästina. (Ibid., 213–215.) Résumés the excavations at the ancient city of Gezer by Macalister since 1902. Gezer had a continuous history up to the Crusades of 3000 years. Most of the antiquities discovered belong to the stone and bronze ages.

Stein's weitere Forschungen in Ostturkestan. (Ibid., 97–98.) Based on Stein's letter in the London *Times*, describing his more recent explorations in eastern Turkestan, in the region of Nija, Cherchen, Lob Nor.

Terzagi (N.) Die Geisselung des Hellespontes. (A. f. Religsw., Leipzig, 1907, XI, 145–150.) Discusses Herodotus' account of the scourging of the Hellespont by Xerxes, a magic act intended to overcome the evil spirits of the waters,—the rite was further strengthened by the curse. Related ceremonies are cited from ancient and modern times.

Weissenberg (S.) Palästina in Brauch und Glauben der heutigen Juden. (Globus, Brnschwg., 1907, XCII, 261–264.) Treats of Palestine in the customs and beliefs of the modern Jews. Pregnant women wear beads from the Holy Land and children amulets; the groom in betrothal breaks a glass under foot in memory of the destruction of Jerusalem; the temple-destruction is remembered in house-building; little bags of Palestinian earth are amulets against sickness; the resurrection, it is believed, will take place near Jerusalem; prayers are made toward Jerusalem and for the restoration of Zion; all the great festivals except Purim, are close connected with the Holy Land. The modern Zionistic movement is more practical.

INDONESIA, AUSTRALASIA, POLYNESIA

Basedow (H.) Vergleichende Vokabularien der Aluridja- und Arunndta-Dialekte Zentral-Australiens. (Z. f. Ethnol., Berlin, 1908, XL, 207–228.) Comparative vocabularies of some 450 words with some phrases and sentences (also words arisen since contact with whites), in the Aluridja (2 dialects) and Aranda languages collected by the author.

—— Beitrag zur Enstehung der Stilisierungsornamente der Eingeborenen Australiens. (A. f. Anthrop., Brnschwg., 1908, N. F., VII, 216–219, 4 figs.) Discusses the origin of certain ornamentation of the native Australians from conventionalizing of outlines of the *Pteropus*, of the foot-prints of the kangaroo, modifications of outlines of human and animal figures, etc. The development of the kangaroo-figure on p. 217 is interesting. Other curious figures are developed by modification of human bodies in the dancing posture.

De Sturler (J. E.) Les danseuses de cour à Java. (R. de l'Éc. d'Anthr. de Paris, 1908, XVIII, 174–181.) Treats of the court dancers of Java, their dress, ornaments, actions, etc. They are of two classes, *bedojo* and *serimpie*, distinguished by dress, number and length of dances, etc..

Grabowsky (F.) Der Häuserbau, die Dörfer und ihre Befestigungen bei den Dajaken Südost-Borneos. (Globus, Brnschwg., 1907, XCII, 69–75.) Gives details concerning house-building, villages and their fortifications among the Dayaks of the Kapua river in S.E. Borneo, from investigations of the author in 1881. The fortified villages are called *kotta* (one is figured on p. 73).

Klaatsch (H.) Die Steinartefakte der Australier und Tasmanier, verglichen mit denen der Urzeit Europas. (Z. f. Ethnol., Berlin, 1908, XL, 407–436, 2 pl., 8 figs.) Discusses Australian and

Tasmanian stone implements in relation to those of prehistoric Europe. K. thinks that his Australian and Tasmanian material "strikingly confirms the chief results of Rutot's most recent work," but arranges it according to his own independent principles. The parallel between the Australian-Tasmanian material and that from primitive Europe is many-sided. Rutot's most primitive specimens of the Mesvinian or Rutelian find their counterparts in Australia or in Tasmania. Tertiary man has existed in Europe as well as in Australia. K. considers the eolith question now settled in favor of human origin.

Mathews (R. H.) Some mythology of the Gundungurra tribe, New South Wales. (Z. f. Ethnol., Berlin, 1908, XL, 203–206.) English text of a tale of Gu-rang'-atch, one of the Burriñgilling, legendary folk (much cleverer than the people of the present time) who "could make rivers and other geographical features, cleave rocks and perform many similar Herculean labors." G. had contests with Mīr-ra'-gañ, the tiger-cat.

Moszkowski (M.) Ueber zwei nichtmalayische Stämme von Ost-Sumatra. (Ibid., 229–239, 3 figs.) Treats of the Orang Akett (only 300 now remain in three villages) and the Sakei, — stature, cephalic and facial measurements of 117 Sakei and 13 Akett are given. Notes on physical characters, temperament, weapons, shamans, houses, activities, use of environment and products, festivities, etc. The average stature of the brachycephalic (84.32) Akett is 1518.8 mm.; of the dolichocephalic (75.45), Sakei 1561.6 mm. The Sakei of Sumatra belong with those of Malacca. The Sakei strikingly resemble the Veddas and the dwarfism of the latter may be only secondary. The Sakei have pile-dwellings on land. Unlike the Akett, the Sakei have a great surplus of women.

Pöch (R.) Eine Reise an der Nordostküste von Britisch-Neuguinea. (Globus, 1907, XCII, 277–283, 5 figs., map.) Gives results of visit to the Collingwood and Goodenough Bay regions of British New Guinea in 1905, notes on the native tribes (Yassiassi and their dances; Kworafi houses; Boiana, tree-climber, etc.). A few words and the numerals 1–10 from Mosquito id. are given; the cephalic indexes of 14 individuals varied from 70 to 80, indicating considerable intermixture. The lowest adult stature met with was 1296 mm.; another of 1420 was found at Yassiasi. Drinking water by means of the interlocked fingers was noted at one place.

—— Prähistorisches aus Neuguinea. (Ibid., 301.) Calls attention to traces of a prehistoric culture formerly existing in British New Guinea, first made known by Monckton in 1905 for the region of Collingwood Bay in Rainu, in his *Annual Report on British New Guinea*.

Schuller (R. R.) Ergänzungen zur, "Monographie bibliographique sur l'île de Pâques." (Ibid.) Adds 5 maps and plans and 26 other titles (mostly Spanish) to Dr Lehmann's Bibliography of Eastern India in *Anthropos* for 1907.

Strehlow (C.) Einige Sagen des Arandastammes in Zentral-Australien. (Globus, Brnschwg., 1907, XCII, 123–126.) German texts of a moon-tale, two others about the "rain men" and the emus; also native text with interlinear version and free translation of a legend of "the many circumcised." From the Aranda (Arenta) of Central Australia.

Volz (—) Beiträge zur Anthropologie und Ethnographie von Indonesien. III. Zur Kenntnis der Kubus in Südsumatra. (A. f. Anthrop., Brnschwg., 1908, N. F., VII, 89, 109, 2 pl., 13 figs.) Gives detailed anthropological description, measurements (stature, head, face, etc.), etc., of 17 Kubus (men 11, women 6) between the ages of 16 and 50 from South Sumatra, — two physical types, one of Negrito origin, are distinguished. If the Kubus have a Malay element, the mixture must have occurred in pre-Mahometan times. Culture (very low, half-nomad people), clothing (no real hair-dressing), houses (very primitive, but improvements recently) and furniture, hunting (most creatures serve for food), agriculture (shared by men and women), festivals, bark cloth and string, vessels of wood, basketry, articles of bamboo, political organization (republican), position of woman (generally quite subordinate), marriage (no ceremony or festival), mutilations (circumcision occasional, teeth-filing different from that of the Malays; tattooing, body-painting, deformation of nose, ears, lips not practiced), death and burial, dances (said not to dance) and musical instruments (none found), mental life (conversation with natives given, p. 106–7). At pp. 107–108 a German-Kubu-Malay vocabu-

lary of some 90 words is given. The numerals 1–19 are as in Malay. A brief *pantum* is given on p. 107. The Kubu vocabulary contains a number of Battak words. Altogether the Kubus are a very primitive people.

AMERICA

A. Afrikanische Märchen in Westindien. (Globus, Brnschwg., 1907, XCII, 33). Notes on Jekyll's *Jamaican Song and Story* (London, 1907).

Adams (H. C.) Along the old Inca highway. (Nat. Geogr. Mag., Wash., 1908, XIX, 231–249, 16 pl., 2 fg.). Describes journey from Sicuani to Cuzco. Notes on Quechuas, food and drink. Illustrations (Indian types, ruins, etc.), ethnologically valuable.

Bateman (L. C.) The Maine Indians of to-day. (So. Wkmn., Hampton, Va., 1908, XXXVII, 145–152; 5 fgs.). Notes the Passamaquoddies and Tarrantines of Calais and Oldtown, Me. The men are mostly guides and lumbermen, the women famed for basketry. These Indians have made good progress, though they have preserved old customs, etc., and retain many ancient myths and legends. They are all Catholics, having been long ago converted by the Jesuits. A daughter of the Tarrantine chief Madokawando, became the wife of the Baron de Castine. The name Orono perpetuates the memory of another.

Chamberlin (R. V.) Animal names and anatomical terms of the Goshute Indians. (Proc. Acad. Nat. Sci., Phila., 1908, 74–103.) Valuable vocabulary (2 cols. to pages) of terms for body (organs and parts), names of mammals, birds, reptiles, insects, with notes on meanings, use, etc. Some notes on morphology. Goshute and Goship dialectical differences are recorded. The "white man" figures in the names of many things, *bee*, "bob-white," carp, fowl, parrot, etc. The giraffe, whale, etc., are identified with certain mythic animals.

Chester (C. M.) Haiti: a degenerating island. The story of its past grandeur and present decay. (Nat. Geogr. Mag., Wash., 1908, XIX, 200–217, 2 pl., 2 fg.) Historical sketch with pessimistic conclusion that "Haiti is degenerating to a condition of barbarism." Admiral C. apparently believes the worst tales of Voodooism.

Dana (M.) Voodoo, its effect on the Negro race. (Metrop. Mag., N. Y., 1908, XXVII, 529–538, 5 fgs.) Treats of voodoo in the United States and Haiti, references to Miss Owen, St John, etc. According to D., "there is an annual gathering of the elect in Louisiana, which is held on St John's Eve, June 23d, at a lonely spot somewhere in the neighborhood of Lake Pontchartrain, but the exact location is kept secret." The cult is still making headway, not declining. Voodoo came into the U. S. from Haiti, whither it was carried "by slaves from Ardra and Whydah," where the faith still remains to-day. To ceremonies of the snake god were added human sacrifice and cannibalism, rites of the god Shango. Voodoo came to Louisiana about 1809.

Gonzales de la Rosa (M.) Découverte de trois précieux ouvrages du métis péruvien Blas Valera, qu' on croyait détruites en 1596. (J. Soc. d'Amér. de Paris, 1908, N. S., IV, 192–207.) Treats of the supposedly lost works of Blas de Valera, the *mêtis* historian of Peru, — *History of Peru* (in Latin), *Historical Vocabulary* (in Spanish), *The Indians and their Customs*. See also *Revista Histórica* (Lima), 1906, II, 180–199.

—— La leyenda de Jauja. (R. Histór., Lima, 1907, II, 553–561). Treats of Jauja (in the time of Pizarro Xauxa) a place in Peru, which in popular imagination, etc., became a fabulous city of great wealth, sometimes a wonderful island, sometimes synonymous with Peru itself for riches, etc. The text of a poem on the "Island of Jauja" is given.

—— Las antiguëdades de Manabi del Profesor Saville y el estudio de la civilización de los Caras. (Ibid., 569–75.) Résumés and reviews Dr M. H. Saville's *The Antiquities of Manabi* (N. Y., 1907). The archeological investigation of the Cara region is of great importance for the prehistory of Ecuador, etc.

Hamy (E. T.) La hache d'Antoine de Jussieu. (J. Soc. d. Amér. de Paris, 1908, N. S., IV, 203–208, 2 fgs.) Figures and describes the stone axe with wooden handle written of by A. de Jussieu in 1723 and by him presented to the Academy. It is of Carib provenance.

—— L'album des habitants du Nouveau Monde d'Antoine Jacquard, graveur poitevin du commencement du XVII^e^ siècle. (Ibid., 225–236, 4 pl., 1 fg.) Brief account, with reproduction of engravings of Indians, etc., of *Les divers*

portraits et figures faictes sus les meurs des habitans du Nouveau Monde. It has been thought that the artist had under his eye some of the Tupinambas from the island of Marañon, brought to Paris by Razilly in 1614.

Hébert (J.) Survivances décoratives au Brésil. (Ibid., 185–91, 1 pl.) Compares the ornamentation on an earthen vase from Macupy (near the Yapurá) in the valley of the Amazon, with the tattoo patterns of a Caduvei Indian from the Rio Nabileco and of a Chamacocco Indian woman, a slave of the Caduvei of the same place. The tattooing resembles strikingly the figures on vases from Macupy and Manãos, indicating perhaps unity of origin of art and peoples.

Jacobi (A.) Die Einführung des zahmen Rentieres in Alaska. (Globus, Brnschwg., 1907, XCII, 218–221.) Treats of the introduction of the domestic reindeer into Alaska. Based on writings of Georgeson, Gordon, Grosvenor, Sheldon, Jackson, Nelson.

Koch-Grünberg (T.) Das Haus bei den Indianern Nordwestbrasiliens. (A. f. Anthrop., Brnschwg., 1908, N. F., VII, 37–50, 3 pl., 29 fgs.) Describes the *maloca* or characteristic house of the Indians of N.W. Brazil, situation (on high land), construction (work of men), size (sometimes very large), form (oblong or square with variations; sometimes semi-circular or round foundations), ornamentation (paintings,—human and animal figures, conventional designs, etc., on walls and posts,—sometimes the designs are in black, red, yellow, and white on a purple-red ground, a common post-design being that of the serpent. Animal figures made of maize-ears and figures of birds and snakes from palm-leaves are hung up in some of the houses, The divisions of the house, furniture, etc. are treated. The interiors are generally clean. The inhabitants of a *maloca* (mostly one family, often an old couple with their grown up sons and their families; owing to extra-tribal marriage women speaking entirely different languages are often to be found under the same roof) number from 10 to 120 and the author testifies to the good behavior and morality of the Indians. Some of the great dance-festivals are held in the *malocas*. The sick are cared for there and the dead buried under the floor. The *maloca* "is thus the home of the Indian in life and in death."

Lehmann (W.) Reisebericht aus San José de Costa Rica. (Z. f. Ethnol., Berlin, 1908, XXXVIII, 439–446, 6 fgs.) Notes on visit to the American Museum of Natural History (New York), Peabody Museum (New Haven), Peabody Museum (Cambridge), Panama, parts of Costa Rica, and the Central American antiquities in the various museums, etc. While in Costa Rica Dr L. collected extensive Chiripó and Bribri vocabularies, measured a number of Indians (among the Chiripó two physical types occur), made extensive archeological collections from Nicoya and Teraba and obtained a brief vocabulary from Indians of the Rio Lari in Tuis. Among Chiripó children several cases of "Mongolian spots" (1½–2 yrs.) in the coccygeal region were noted,—one had a smaller "blue spot" on the upper arm. According to the Indians these spots, called sulá´-ũi ("spot of Sula") indicate that the goddess Sulá´ has touched the new-born child with her finger.

Marcel (G.) Le Père Yves d'Évreux. (J. Soc. d'Amér. de Paris, 1907, N. S., IV, 175–184.) Account of life and activities of Father Yves d'Évreux, author of *Voyage dans le nord du Brésil fait durant les années 1613 et 1614*, republished by F. Denis in 1864; and of *Suite de l'histoire des choses plus mémorables advenues en Maragnon ès années 1613 et 1614* (Paris, 1615).

Nordenskiöld (E.) Recettes magiques et médicales du Pérou et de la Bolivie. (Ibid., 153–174, 4 fgs.) Résumés data with personal observation concerning "magical" receipes and "medicine" in Peru and Bolivia. Treats of *callahuayas* ("medicine-men") and their pharmacopoeia, stock-in-trade, etc.; objects (tin figures of human beings, animals, instruments, etc.) buried when building a new house; fumigation of houses; defense of houses and their occupants against hail and lightning (crosses, St. Nicholas bread, etc.); means of obtaining rain, fine weather, a good harvest (excavating an old tomb prevents rain, or leaving the dead unburied; fumigation of the fields ensures good crops); means of obtaining good horses and donkeys; how to expel disease; diseases and their causes (neglect of ancestors; coming of whites, etc.); classification of diseases, curative methods (21 medicines of the *cholas* for internal and 14 for external use); amulets (stone llamas, figures

representing *coltus* etc.); offerings to find lost objects. The Aymaras and Quechuas have borrowed something from the Spaniards.

Polo (J. T.) Blas Valera. (R. Histór., Lima, 1907, II, 544–552). Account of life and writings of Blas Valera (1551–1596), an authority on Quechua and Aymará and author of a *History of the Incas* in Latin and other words. See *Gonzales de la Rosa* (M.).

Preuss (K. T.) Ritte durch das Land der Huichol Indianer in der mexikanischen Sierra Madre. (Globus, Brnschwg., 1907, XCII, 155–161, 167–171, 5 fgs.) Account of visit in spring of 1907 to the country of the Huichol Indians of the Mexican Sierra Madre, with descriptions of the feast of roasting the young maize ears (and sacrifice of steer) at Tierras blancas, and similar rites and ceremonies at Sta. Gertrudis, healing of the sick (there are seven sorts of disease songs) at Rancho San Isidro, the temple of San Andres, Sta. Catarina, its temple, "carnival," etc., ceremonies and rites connected with sun-cults, the holy places (caves, etc.) in the neighborhood of Sta Catarina, — many relics and continuations of old-time heathen practices.

Robelo (C. A.) Diccionario de Mitologia Nahoa. (An. Mus. Nac. de Mex. Seg. Ep., 1908, V, 193, 336.) Continuation, *Temacpallitotique-Tonacatecutli*, of dictionary Nahualt mythology. The most important articles are those on *templos*, *teotl* (212–218), *Tepoztecatl* (228–234), *Tezcatlipoca* (244–250), *Tloque Nahuaque* (300–321), *Toci* (321–326), etc.

Sarfert (E.) Haus und Dorf bei den Eingeborenen Nordamerikas. (A. f. Anthrop., Brnschwg., 1908, N. F., VII, 119–215, 84 fgs., 3 maps.) This well-documented monograph treats in detail of house and village among the various aboriginal peoples of North America. General culture (collectors and hunters, fishers, "hoe-culture"; nomads, half-sessile,— summer-sedentary and winter-sedentary), general traits of house-architecture (temporary and permanent, sommer and winter houses), material used, peculiarities of house-building (pit, doors and openings, communal houses, interior), round (tents of several varieties, houses of bark and wood, straw, grass, leaves, earth-houses, snow-house of Eskimo, etc.) and four-cornered (wedge-style, saddle-roof, wooden-house winter and summer; earth-houses, straw mud houses, Pueblo dwellings). The North American Indian houses "appear everywhere as a function of climate and vegetation." Five chief round house and four chief four-cornered types, with numerous variations, are distinguished. In the section in the village (pp. 187–211) origin and situation, fortification (also Pueblo as artificial fortification), public buildings, etc. (village-house, sweat-house, village square, etc.), are treated. Of villages 4 types are distinguished ("line village," Pueblo, round village, "weilęr"). Influence of European culture can be traced in the villages of the Hurons, etc. Some Eskimo and California villages represent the primitive type.

Schmidt (M.) Ueber altperuanische Ornamentik. (Ibid., 22–36, 2 pl., 42 fgs.) Treats of the ornamentation of the pottery and textile products of the ancient Peruvian culture of the Ica valley. According to Dr M., "the 'textile-square' in its characteristic form with the diagonally running step-lines and the figures in the two opposite corners is the basal element of the whole surface-ornametation in the strict sense. This is true of the old Ica material as it is also of that of certain modern Indians of the Xingri region. And a great part of the geometric and figurative ornamentation has grown out of the typical models necessarily produced in textile technique, e. g., the use of the palm-leaf. There are two chief groups of ornamentation of surface which are distinct in origin, — natural representation entirely independent of textile ornament and that which has arisen first as textile model and then has been applied secondarily as surface ornament in the narrower sense." The development of various figures from the "textile square" is shown both on basketry and pottery (hook-pattern, swastika, certain bird and animal figures, etc.). Interesting is the human figure (fig. 40) which has been developed on a basis of technique and the "textiile square."

Schuller (R. R.) Die Araukaner in den Missionen von Südchile. (Globus, Brnschwg., 1907, XCII, 337–338.) Gives, from the government report, *Empadronmiento de los indijenas*, statistics, of the Araucanian Indians, and notes on their characţer. This census (not exact) for the south Chilian missions gives alto-

gether some 20,000, of whom about half are still heathen.

—— Veröffentlichung alter Handschriften über Araukaner. (Ibid., 289.) Notes on the MS. of the Franciscan missionary Father Calzada, whose *Confesionario* in Spanish and Araucanian is in press, edited by Dr Schuller, with biographical notes by Father Pavez, O.F.M.

Uhlenbeck (C. C.) Ontwerp van eene vergelijkende vormleer der Eskimotalen. (Verh. d. k. Akad. van Wetensch. te Amsterdam, Afd. Lettrk., N. R., D. VII, No. 3, 1907, 1–76). Sketch of the comparative morphology (noun, pronoun, verb) of the Eskimo dialects (Alaskan, Kadjak, Labrador, Greenland, Mackenzie River, Namollo).

Winchell (N. H.) Pre-Indian inhabitants of North America. II. (Rec. of Past, Wash., 1907, VI, 163–181, 3 pls., 3 fgs.) Treats of man and the elephant and mastodon (the elephant became extinct in N. America not more than 2,000 years, and "not more than 500 years have passed since the Mound-builders left the Ohio valley"), the Wisconsin glacial epoch (Trenton gravels, N. J., Little Falls, Minn., Masterman axe, etc.). According to W., "the American race is apparently as remote in time as any of Europe or Asia."

FOREIGN NOTES

Paris School of Anthropology

The Paris School of Anthropology opened on November 3d for its thirty-third year with a corps of eight professors, three associate professors, and four lecturers. Courses will be offered as follows: L. Capitan, professor, Prehistoric Anthropology. G. Hervé, professor, Ethnology. P. G. Mahoudeau, professor, The Genealogy of Man; Anthropoids; Hominians. L. Manouvrier, professor, Physiological Anthropology. A. de Mortillet, professor, A Comparative Study of Primitive Industry, both Ancient and Modern. G. Papillault, professor, Sociology. F. Schrader, professor, Anthropological Geography. S. Zaborowski, professor, Ethnography (Italy, The Balkans, Greece). R. Dussaud, associate professor, The Ancient Peoples of Asia Minor. J. Huguet, associate professor, General Ethnology (The Berbers). E. Rabaud, associate professor, Embryogeny and Anatomy. R. Verneau, lecturer, Fossil Man in Europe and America. R. Anthony, lecturer, Vestigial Structures in Man. H. Pieron, lecturer, Psychometry and Ethnic Psychology. A. Marie, lecturer, Physical and Mental Degeneracy.

G. G. MacCurdy.

Bird-bolas among the Eastern Eskimó

In a description of the Eskimo of Baffin Land and Hudson Bay[1] I described a number of bone objects collected by Captain George Comer on Southampton island, which were explained to him by the Eskimo as buttons for closing women's belts. I expressed the opinion that, since many of these specimens were found together, and since all the perforations are near the narrow end of the specimens and do not allow of a stout thong passing through, they are more likely to be bird-bolas such as are known from Alaska. In a letter from Cape Fullerton, dated July 6, 1908, Captain Comer corroborates this view. He writes:

"I wish to acknowledge that you were right in regard to the use of the bola or sling among the Southampton island natives. It is, as you are aware, the custom to place near the head of a grave, under stones, such implements as a person has used in life. At one grave at

[1] *Bulletin of the American Museum of Natural History*, xv, 396.

Southampton island I found, placed with the harpoons and arrowheads, three of these round pieces of bone, each having a small hole in it. An Iglulik native accompanied me, who said that his grandfather had told him that these bones were used in capturing large birds.

"There was another custom peculiar to these people. They fastened a piece of bone, six or eight inches long and about a pound in weight, across the heavy thong to which the dogs were harnessed. They claim that when the dogs start to pull, this decreases the strain on the dogs' harness.

"I am also told that the natives of King's cape were in the habit of coming over to Bell island, which is part of Southampton island, to trade with the natives." FRANZ BOAS.

BRITISH ASSOCIATION MEETING

The 1908 meeting of the British Association for the Advancement of Science was held in Dublin, September 3 to 9. During the meeting many papers of unusual interest were read before the Anthropological Section, which met at the Royal College of Physicians. In *Man* for October, 1908, appears a brief account of the meeting, together with summaries of various papers, several of which are given below:

J. P. DROOP: *Neolithic Culture in Northern Greece.*— Recent exploration of the neolithic culture of northern Greece has shown that the plain districts of southern Pelasgiotis, Thessaliotis, Phthiotis, Malis, and Phocis were inhabited from an early date by three peoples alike in culture, and near akin, but distinguishable by the varying style of their painted pottery. The stone implements consist of celts (sometimes bored), rubbers, and polishers; while obsidian chips are much more frequent than flint. Traces of eight successive settlements show that the period of painted pottery gradually passed, after the fourth settlement, into a period of unpainted polished ware. The eighth neolithic settlement is roughly dated to 1300 B.C. by the presence of important Mycenean sherds. A series of tombs sunk into the remains of this eighth settlement indicates a subsequent poor bronze period. Thus, during the development of the Ægæan bronze culture the north of Greece was still in an Age of Stone, and used bronze only at a comparatively late date, and presumably but for a short while before the introduction of iron. The date at which these neolithic peoples brought in their comparatively high culture may be placed in the middle of the third millennium.

PROFESSOR G. ELLIOT SMITH: *Anthropological Work in Egypt.*— The earliest known human remains found in the Nile valley, when com-

pared with those of later times, demonstrate the fact that in predynastic times Egypt and Nubia were inhabited by one and the same race, which has persisted in Egypt with little or no change in physical characteristics throughout the intervening 6000 years until the present day. On the whole they share the characteristics which distinguish the majority of the peoples fringing the Mediterranean. The physical characters of the population are remarkably uniform; they exhibit a range of variation, which is not appreciably greater than that of the present races known to us, though, of course, it is easy to select the extremes of these variations and call them "coarse" and "fine" types or "negroid" and "non-negroid" strains. As we should expect, there is some slight evidence of an infusion of black blood, but this is very small in amount, and its effects very much slighter and less widely diffused than is commonly supposed to be the case. The negro influence is least marked, if indeed it is not a negligible factor, in the earliest predynastic times; but it becomes more and more pronounced in later, and especially so in modern times. From the time of the earliest Egyptian dynasties a noteworthy change occurs in the physical characteristics of the people of Nubia, and, though in a very much slighter degree, in Lower Egypt. The inroad of negroes from the South leads to the transformation of the Nubian population into a hybrid race. And there is some evidence to show that even at the time of the Pyramid builders there was some influx of an alien race from the Levant, which intermingled with the predominant Egyptian population of the Delta. Three thousand years later a much greater immigration of people presenting the same alien characteristics poured into Egypt and Nubia. From this time onward these foreign immigrants came to Egypt in a constant stream.

PROFESSOR G. ELLIOT SMITH: *The History of Mummification in Egypt.* — In predynastic times in Egypt it was the custom to bury the bodies of the dead in the sand, roughly wrapped in skins, linen, or matting. As the result of the dryness of the soil, and the exclusion of the air by the close adaptation of the sand to the body, desiccation often occurred before any putrefactive changes set in, and the corpse thus became preserved in a permanent form. Thus the idea must have naturally presented itself to the Egyptian people, perhaps in early dynastic times, to attempt to secure by art the preservation of their dead, which was no longer attained naturally, once it became the custom to put the body into a coffin or a rock-cut chamber, because the air thus buried with the corpse favored putrefaction. The Egyptians would be encouraged in these attempts, to which they no doubt were prompted by their religious beliefs

no less than by the natural inclination of all mankind to preserve the remains of those dear to them, by the help which the properties of their soil and climate afforded them, as well as by their knowledge of the properties of the preservative salts, found ready at hand in such abundance in Egypt, and of the resins obtained from neighboring lands, with the properties of which they had been familiar even in predynastic times. In this way the origin of the idea, the reason for attempting to put it into practice, and the means for doing so become intelligible to us. We have no exact data to permit us to say exactly when embalming was first attempted in Egypt. Although the earliest bodies certainly known to have been embalmed are of the period of the tenth dynasty (found at Sakkara by Mr Quibell), there is some slight evidence to suggest that some form of mummification was attempted in the times of the earliest Pyramid builders. By the time of the Middle Empire the general technique of the operation had attained the stage which in its main features was the conventional procedure for the succeeding 2000 years. But it was in the time of the New Empire that the process of mummification reached its highest development. Further stages in the evolution of the art of embalming were followed by a rapid decline.

ANTHROPOLOGIC MISCELLANEA

A Massachusetts Steatite Quarry.— On July 19, 1907, in company with Mr J. T. Bowne, of Springfield, the writer visited an ancient aboriginal steatite quarry situated in the Wilbraham Hills, Massachusetts. The quarry is on Twelve Mile brook, on the Seavers farm, about a mile and a half east of the North Wilbraham station of the Boston and Albany railroad, twelve miles east of Springfield, and not far from Chicopee river. The steatite, which is of inferior quality, occurs at the foot of a knoll in large bowlders, some of which are from five to seven feet in thickness. It is apparent that the Indians hewed out the solid bowl-shaped blanks from the parent bowlder, and carried them to the top of the knoll where the rougher part of the hollowing process was carried on, as fragments of unfinished vessels are found strewn over the ground and near the surface for an acre or more, together with the rude picks with which the work was done. Apparently no long period of occupancy occurred here, for only a few arrowpoints and fire-cracked stones have been found, suggesting a few days' camp while the work in the quarry was in progress.

In 1903 the site was partially explored by A. L. Dakin, a student at Harvard University, for the Springfield Museum, and a good series illustrating the manufacture of steatite vessels was obtained for that institution. In the main quarry a large steatite bowlder was uncovered, and a portion, four feet high by five feet long, still remains above ground. This block is very interesting as it shows with surprising newness the work of the aboriginal quarryman. Several blanks for vessels have been removed from the mass, as is shown by the scarred and hollowed surface, and three others blocked-out but undetached, remain on the parent bowlder. The most prominent of these worked blanks stands out about two and one-half or three inches from the mass on the north side of the bowlder. With one of the rude stone picks so abundant over the site, the ancient artisan had hewn a channel or groove about the selected portion, and hacked away until the bowl-shaped mass stood out in relief. Then the pecking was continued in and under until the blank stood upon a pedestal from which it might easily be broken. In the case of the bowlder under discussion the task was abandoned before the last step took place. The ground about this bowlder is strewn with steatite chips and dust.

The tools used in the work were made of trap procured from Mount Tom, some six or seven miles away in a direct line, but ten or twelve miles by water. The implements consist mainly of exceedingly rude chipped points, but long and neatly made picks with polished points occur. These do not appear ever to have been grooved or notched for hafting, as do those found in the steatite quarries in the vicinity of Washington, D. C. The broken points of these implements are found in the debris about this site, and many of the picks found appear to have been resharpened again and again.

No tools save the picks have been found, with the sole exception of one very much battered grooved ax and several fragments of similar implements, and the few arrowpoints before mentioned. These are all in the collection of the Springfield Science Museum.

The finishing process was never carried on in the immediate vicinity of the quarry, at least no finished pots or fragments of them have been found there. It would appear that the rough bowls were taken to the village sites along the nearby Connecticut river and there worked down and polished. Fragments of bowls, both finished and in the process of manufacture, occur on all the local sites, and fine whole vessels have been found in a prehistoric burial place at Holyoke, and at Hadley, Litchfield, and other localities. Some very fine examples of these are in the collection at the Gilbert Museum, Amherst College, Amherst, Mass.

Throughout this region soapstone seems to have taken the place of pottery to a very large extent, as earthenware vessels and even sherds seem to be exceedingly rare in the Connecticut river valley.

An excellent series from the Wilbraham Hills quarries are in the Springfield Science Museum; others are in the Gilbert Museum at Amherst, the Peabody Museum at Harvard University, and in the cabinet of Mr J. T. Bowne, of Springfield, who has made a careful and accurate study of the archeology of the Connecticut valley region.

American Museum of Natural History, New York. Alanson Skinner.

No New Serpent Mound in Ohio. — In a recent number of *Records of the Past*[1] reference is made to an earthwork in Ohio under the title "A New Serpent Mound in Ohio and its Significance." There are so many mistakes in this article, and it is so generally misleading, that it seems a duty to place on record the facts in the case for the benefit of future students who may not be familiar with the relative value of the

[1] Vol. 7, part 5, pp. 220–224, Sept.–Oct., 1908.

testimony relating to this site, especially since the earthwork in question may eventually become even more reduced, if not entirely obliterated.

Several years ago in *The American Antiquarian*[1] I published a brief note regarding this earthwork under the title "Not a Serpent Mound." During that year I made measurements of that part lying in the natural forest; the other portions had been cultivated for many years, making it difficult to trace them and even impossible to follow some of the embankments. Photographs were made and cross-sections cut in the embankments. The negatives, specimens, and map were transferred to the Department of Anthropology of the World's Columbian Exposition at Chicago, and this material was subsequently deposited in the Field Museum of Natural History.

The most accurate published map of this site of which I am aware forms plate 2 (with a description on page 8) of Charles Whittlesey's "Descriptions of Ancient Works in Ohio," published in Vol. III of *Smithsonian Contributions to Knowledge*, Washington, 1850. The map bears the title "Ancient work, Warren county, Ohio, two miles below Todd's fork." The survey was made by Whittlesey in 1839, when the work was much more easily traced than in recent years. The map distinctly shows the part of the earthwork described in *Records of the Past*, at the left, to the west of the letter A and immediately south of the bayou. That the work is not a serpent mound is there made clear.

I do not recall anything new in the recent article referred to that will be useful to archeological research in the future. It is possible that the Ohio Archæological and Historical Society or other institution may have made a survey of the earthwork of which I am not aware. My personal explorations were confined to that portion lying within the maple forest to the west of the point marked A on Whittlesey's map; in fact I did not even attempt to trace the other embankments, and the people of the vicinity seemed not to have been aware of their existence, although they had been under cultivation for more than half a century. It consequently would seem that the Serpent Mound article to which attention is directed must be set aside in favor of Whittlesey's much earlier description and map.

HARLAN I. SMITH.

Charles Eliot Norton died at his home in Cambridge, Mass., October 21, 1908. He was born in Cambridge, November 16, 1827, was graduated at Harvard in 1846, and went to India as supercargo in 1849, remaining there about two years; later he went to Europe, where he

[1] Vol. 14, part 5, p. 299, Sept., 1892.

spent two years, and was again on the Continent from 1867 to 1873. From 1862 to 1868 he was editor of the *North American Review;* in 1874 he became professor of history and art at Harvard University, and served in that capacity until 1898, when he resigned and became professor emeritus. Professor Norton was largely instrumental in founding the Archæological Institute of America, and became its first president, an office which he held until 1890. He manifested particular interest in the excavation of Assos in Asia Minor, and in the founding of the American School of Classical Studies at Athens; but although the important investigations by Bandelier in the Pueblo country of our Southwest were conducted during Professor Norton's presidency, his belief was that because the arts of the American aborigines are not comparable with those of the peoples of the Old World, American archeology is not worthy of serious study. Professor Norton was the author of *Considerations on Some Recent Social Theories; Historical Studies of Church Building in the Middle Ages*, and *Notes of Travel and Study in Italy*. While the chief subjects of his study were Dante, and Greek and Italian art, he edited the letters of Lowell, of Carlyle and Emerson, of Goethe and Carlyle, and of Ruskin, and the *Writings of George William Curtis*. Honorary degrees were conferred on him by Cambridge and Oxford, Columbia, Harvard, and Yale. F. W. H.

Prof. Frederick Starr, of the University of Chicago, has returned from a seven months' trip to the Philippine islands, whither he went at the invitation of the Insular Government to give instruction in anthropology and ethnology at the annual Teachers' Assembly, held at Baguio, the summer capital, from April 18 to May 15. In connection with that work, Professor Starr conducted, at the Assembly, an Anthropological Conference, devoted to questions relative to the Malay race, extending through three days — probably the first ever held in Malaysia. On the completion of his assembly work, Professor Starr traveled widely in the islands, visiting many of the more interesting of the native populations. Among these were the Negritos (Aetas), Benguet Igorot, Bontoc Igorot, Ifugao, Moro of various groups, and Bagabo. He also visited and made observations on several of the civilized and Christian peoples, as the Ilocano, Pangasinan, and Tagalo. He collected a considerable mass of ethnographic material and made many observations of interest. In making a general survey of the field of Philippine ethnology, Professor Starr was anxious to learn what opportunity exists for the sending of well-equipped students into the area to conduct serious original investigations. Professor Starr's

personal interest was largely in the political and social conditions in the islands. During his absence in the Philippines, the French Government conferred upon Professor Starr the *Palmes d'officier de l'Instruction publique*. This is the third recognition that he has received from foreign governments. In 1900 the Netherlands gave him the Museums Medal, and in February of this year the Congo Free State bestowed on him the cross of an officer of the Order of Leopold II.

John Henry Wright died at Cambridge, November 26, 1908. The son of a missionary to Persia, he was born at Urumyah, February 4, 1852, and was educated at College Hill, Poughkeepsie, and at Dartmouth and Leipzig, at the latter university being a student of classical philology and Sanskrit in 1876–78. Professor Wright was assistant professor of ancient languages in the Ohio Agricultural and Mechanical College, 1873–76; associate professor of Greek at Dartmouth, 1878–86; professor of classical philology at Johns Hopkins, 1886–87, and professor in the American School of Classical Studies at Athens, 1906–07. He was editor of the *American Journal of Archæology*, 1897–1906, and of other magazines and books devoted to classical subjects. He was also a member of the Archæological Institute of America and president of its Boston Society at the time of his death; a fellow of the American Academy of Arts and Sciences; a member of the American Philological Association, serving as its president in 1894; and a member of the American Anthropological Association, to which he rendered valued service as a member of its committee on archeological nomenclature.

THE Department of Archeology, Phillips Academy, Andover, Mass., has announced the following free lectures for the present season:

Oct. 27.	Games of the American Indians.	Warren K. Moorehead
Nov. 17.	Five American Nations: Conquerors of the Snow, Forest, Mist, Desert, and Plains.	Harlan I. Smith
Dec. 8.	The White Races.	Charles Peabody
Jan. 12.	The Metal Ages.	Charles Peabody
Jan. 26.	Lewis and Clark Expedition to the Head of the Columbia.	Warren K. Moorehead
Feb. 9.	Lewis and Clark Expedition to the Pacific.	Warren K. Moorehead
Feb. 23.	Caves at Home and Abroad.	Charles Peabody
Mar. 9.	Social Life of the American Indians.	Warren K. Moorehead
Mar. 23.	Lake Dwellings and the Bronze and Iron Cultures.	Charles Peabody
Apr. 13.	Origin, Accomplishments, and Destiny of the American Indians.	Warren K. Moorehead

THE DEGREE of Doctor of Philosophy in Anthropology was conferred for the first time at the University of California in May, 1908. The recipient, S. A. Barrett, presented as his thesis *Pomo Indian Basketry*, a study containing the results of field work extending over a number of years. Mr Barrett received the degree of B.S. at the University of California in 1905, and of M.S. in 1909. He spent the academic year 1907–08 in the study of anthropology at Columbia University. In 1906 he was appointed museum assistant in the department of anthropology of the University of California. At the present time he is in South America under the auspices of the Heye Expedition.

THE DEPARTMENT OF ARCHEOLOGY of Phillips Academy, Andover, Mass., announces that the publication of Mr Warren K. Moorehead's work, *The Stone Age*, is now assured. It will be issued in two volumes, of about one thousand pages, with many illustrations, and is designed to be "an archeological encyclopedia of the implements, ornaments, weapons, utensils, etc., of the prehistoric tribes of the United States." The volumes will be published by Houghton, Mifflin & Company, of Boston and New York, and will be sold to subscribers at cost, five dollars.

IT will be of interest to ethnologists, who already realize how rapidly are passing away the older members of our Indian tribes, to learn of the death, on December 5, near Stidham, Oklahama, of Rolly McIntosh, former chief of the Creek Nation, aged seventy-six years; and also of the death of Hump, a former leading Sioux warrior, at his camp at Cherry Creek, South Dakota, followed shortly afterward (December 16) by the demise of the celebrated American Horse, at Pine Ridge agency.

IT is announced that the collection of implements of the Bronze Age, formed by Canon William Greenwell, of Durham, England, will be presented to the British Museum. This collection of implements of the Bronze Age is regarded as the most extensive of its kind in private hands, and is said to compare well in many respects with that already in the British Museum. It includes specimens from nearly all parts of Great Britain and other countries of Europe, and also from Asia.

DR ARTHUR J. EVANS, F.R.S., who resigned the keepership of the Ashmolean Museum of Oxford University at the close of the year, has given to the Museum the collection of Anglo-Saxon jewelry and other relics bequeathed to him by his father, the late Sir John Evans. With it is also a comparative series illustrating the early Teutonic art of the Continent, including specimens of Scandinavian, Frankish, Lombard, and Gothic work.

ACCORDING to the *Bulletin Périodique du Comptoir Ethnographique de Belgique*, Dr Blackmore, of Salisbury, England, has given to that city a fine museum building in which have been installed his splendid eolithic and paleolithic collections. The same publication states that a new archeological society, called the East Anglian Society of Prehistorians, has been founded at Norwich (Norfolk). Dr Allen Sturge is its first president.

WE learn from *Nature* that Mr N. W. Thomas has been selected by the Secretary of State for the Colonies to conduct an investigation into the laws and customs of the native tribes of southern Nigeria. The tribes to be studied are, in the first instance, those of the old kingdom of Benin, but it is probable that the inquiry will be continued and include the natives of the other West African colonies.

MR WILLIAM H. HOLMES, chief of the Bureau of American Ethnology, has been elected president of the American Anthropological Association and vice-president for Section H (Anthropology and Psychology) of the American Association for the Advancement of Science for 1909. Dr George Grant MacCurdy, of Yale University, has been elected secretary of Section H.

THE annual meeting of the American Anthropological Association was held in Baltimore, December 28 to January 2, in affiliation with Section H of the American Association for the Advancement of Science and the American Folk-lore Society. A full report of the proceedings of the meeting will appear in the next issue of this journal.

WE regret to record the death, at Paris, on November 18, in his sixty-seventh year, of Dr Theodore-Jules-Ernest Hamy, honorary director of the Musée d'Ethnographie; president of the Société des Américanistes of Paris, ex-president of the Société d'Anthropologie, and a member of many other learned bodies.

DR J. W. LOWBER, F.R.G.S., F.R.A.S., of Austin, Texas, has been granted the diploma of fellow of the Royal Scottish Geographical Society. Dr Lowber is a member of the American Anthropological Association and a fellow of the American Association for the Advancement of Science.

MRS FREDERICK F. THOMPSON has given to the New York State Museum as a memorial of her father, former Governor Myron H. Clark, the sum of fifteen thousand dollars for a representation of the culture of the Six Nations of New York, to be known as the Clark Museum of Iroquois Culture.

Dr Albert Ernest Jenks, professor of anthropology in the University of Minnesota, was the representative of the American Museum of Natural History, New York City, at the inauguration of Dr Hill as president of the University of Missouri, December 10 and 11.

Prof. William Z. Ripley, of the department of economics of Harvard University, delivered on November 13 the annual Huxley lecture before the Royal Anthropological Institute. His subject was "The European Inhabitants of the United States."

Dr Percy Gardner, professor of archeology at Oxford, and Dr Barclay Vincent Head, sometime keeper of the department of coins and medals in the British Museum, have been elected corresponding members of the Prussian Academy of Sciences.

The next Prehistoric Congress of France will be held at Beauvais during the summer of 1909. The Belgian Congress of Archeology will hold its session at Liège from July 31 to August 5.

Mr Warren K. Moorehead of Phillips Academy, Andover, Mass., has been appointed by President Roosevelt a member of the United States Board of Indian Commissioners.

At a meeting of the American Antiquarian Society held at Worcester, October 21, Professor Otis T. Mason and Mr F. W. Hodge, of Washington, were elected to membership.

The *American Antiquarian and Oriental Journal* will henceforth be published at Salem, Massachusetts, instead of in Chicago. Rev. Stephen D. Peet will continue as editor.

The Anthropological Society of Stockholm has elected Dr Sven Hedin to honorary membership in the Society, and has conferred on him a Wahlberg gold medal.

The council of the University College, Bristol, England, has appointed Dr John Beddoe, F.R.S., honorary professor of anthropology.

The Broca prize for 1908 has been awarded by the Anthropological Society of Paris, to Dr Paul Rivet.

INDEX TO AUTHORS AND TITLES

ACHOMAWI INDIANS of northern California, 208
ALASKA, copper neck-rings of, 644
— petroglyphs in, 221
ALGONQUIAN INDIANS, wooden bowls of, 423
AMERICAN ANTHROPOLOGICAL ASSOCIATION, proceedings, 103
AMERICAN HORSE, death of, 707
AMERICANISTS, Congress of, 358, 650
AMERICAN MUSEUM OF NATURAL HISTORY, researches, 349
ANTHROPOLOGICAL SOCIETY OF WASHINGTON, proceedings, 117, 286
ANTHROPOLOGY, bibliography of, 175
— at the Chicago meeting, 103
ARCHEOLOGICAL forgeries from Michigan, 48
— notes on Moosehead lake, 549
ARCHEOLOGY, American, groundwork of, 591
— Danish, studies in, 505
— of Porto Rico, 624
— of Virginia, 531
— See RUINS
ARRANDA TRIBE, marriage and descent in, 88
ARROW POISONS, Philippine, 357
ATSUGEWI Indians of northern California, 208
AUSTRALIA, Central, marriage and descent in, 88
— sociology of the Chingalee of, 281
AZTEC, New Mexico, ruins at, 255

BARRETT, S. A., degree conferred on, 707
BERTILLON prize, 359
BEYER, HERMAN. Symbolic meaning of the dog in ancient Mexico, 419
BIBLIOGRAPHY of anthropology, 175
BIRD-BOLAS among eastern Eskimo, 698
BLACKMORE, Dr, museum given by, 708
BOAS, FRANZ. Bird-bolas among the eastern Eskimo, 698
BOLAS. See BIRD-BOLAS
BONTOC IGOROT games, 563
BOWLS, wooden, of Algonquian Indians, 423
BRAIN-WEIGHT of the Filipino, 41
BRITISH ASSOCIATION meeting, 699
BRYANT, HENRY G., collections of, 179
BUSHNELL, D. I., JR. Ethnographical material from North America in Swiss collections, 1. Exploration of a Keltic cemetery near Bern, Switzerland, 165. Glastonbury lake village, 167. An early account of Dighton Rock, 251. Recent excavations at La Tène, 331. The beginning of iron, 332. Old North American club in the Leiden Museum, 333. Ancient works on the Muskingum, 342. British expedition to upper Congo country, 493. The Tradescant collection, 494. Research in Virginia from tidewater to the Alleghanies, 531. The account of Lamhatty, 568

CALIFORNIA, Achomawi and Atsugewi Indians of, 208
— ceremonial quiver from, 168
— Indians, corrections concerning, 356
— totemism in, 558
CAMBRIDGE UNIVERSITY accessions, 176
CANADA, Delawares of, 408
— prehistoric man in, 33
CANNONBALL RUINS, Colorado, excavation of, 596
CATAWBA potters and their work, 399
CAVERNS, exploration of, in Ozarks, 351
CEMETERY, Keltic, in Switzerland, 165
CEREMONIAL quiver from California, 168
CHAMBERLAIN, A. F. First doctor's thesis in anthropology in South America, 334. Left-handedness among Indians, 498. Periodical literature, 145, 306, 470, 677
CHICAGO MEETING, anthropology at, 103
CHINGALEE, sociology of the, 281
CLARKE, JOHN M., honored by Six Nations, 178
CLEVELAND, O., Sawtell Avenue mound at, 502
CLIFF-DWELLINGS, ventilators in, 387
— See RUINS
CLUBS from northwestern America, 496
COLLECTION of objects from Northwest coast, 334
COLORADO, excavation of ruins in, 596

COLORADO, preservation of ruins in, 357
CONGO COUNTRY, British expedition to, 493
CONGRÈS INTERNATIONALE D'ANTHROPOLOGIE, 504
CONGRESS OF AMERICANISTS, 358, 650
COPPER neck-rings of Alaska, 644
CORN-FOODS, Seneca, 575
CORNPLANTER medal, 358
CRIMINOLOGICAL INSTITUTE in Buenos Aires, 179
CULTURE, mind and matter in, 187

DANISH ARCHEOLOGY, studies in, 505
DELAWARES, vestiges of material culture among, 408
DESCENT in Arranda tribe, 88
DIGHTON ROCK, early account of, 251
DIXON, R. B. Achomawi and Atsugewi Indians of northern California, 208
DOG, symbolic meaning of, in Mexico, 419
DÖRPFELD, Professor, gift to, 360
DORSEY, G. A., researches of, 504
DREYER, W. Study of Danish archeology, 505
DURO, CESÁREO F., death of, 504

EELLS, MYRON, obituary, 500
EMMONS, G. T. Copper neck-rings of southern Alaska, 644. Petroglyphs in Alaska, 221
ESKIMO, bird-bolas among, 698
ETHNOGRAPHICAL material in Swiss collections, 1
— problems in the Missouri-Saskatchewan area, 197
— notes on Moosehead lake, 549
EVANS, ARTHUR J., gives collection, 707
EVANS, SIR JOHN, obituary, 355
EXCAVATIONS at Long's Hill, Neb., 60
— of Cannonball ruins, 596
EXPLORATION of Keltic cemetery, 165

FEWKES, J. WALTER. Archeology of Porto Rico, 624. Ventilators in ceremonial rooms of cliff-dwellings, 387
FILIPINO, brain-weight of the, 41
— See BONTOC IGOROT; PHILIPPINES
FISON, LORIMER, death of, 176
FOLKLORE. See TALES
FOOD. See CORN-FOODS
FORGERIES, archeological, from Michigan, 48

GAMES, Bontoc Igorot, 563
GERARD, W. R. The term tomahawk, 277
GILDER, R. F. Excavations at Long's Hill, Neb., 60. Oto village site in Nebraska, 173
GODARD prize, 359
GODDARD, P. E. A confession as to errors in Hupa linguistics, 170.
GREENWELL collection, 707
GROUNDWORK of American archeology, 591
GYPSY tattooing, 361

HAMY, T.-J.-E., death of, 708
HARRINGTON, M. R. Catawba potters and their work, 399. Vestiges of material culture among Canadian Delawares, 408. Seneca corn-foods and their preparation, 575
HARRIS, JOEL CHANDLER, death of, 360
HARTMAN, C. V., appointment of, 178
HARVARD ANTHROPOLOGICAL SOCIETY, 354
HASTINGS, JOHN WALTER, obituary, 356
HEART, J., on ancient works on Muskingum river, 343
HERCULANEUM, excavation of, 177
HERZOG, M. The brain-weight of the Filipino, 41
HEWETT, E. L. The groundwork of American archeology, 591
HEWITT, J. N. B. The name "Kentucky," 339
HITZ, JOHN, obituary, 350
HODGE, F. W. Bibliography of anthropology, 175. Death of Charles Eliot Norton, 704
HOLMES, W. H. Election of, 708. The tomahawk, 264
HOOK-AND-EYE work, 176
HOUGH, WALTER. Collection of old objects from Northwest coast, 334. Obituary of O. T. Mason, 661. Obituary of A. R. Spofford, 503. Philippine arrow poisons, 357
HOUSE of Tcuhu, 174
HUDSON, J. W. Ceremonial quiver from California, 168
HUMP, death of, 707.
HUPA linguistics, 170

IBBETSON, Sir Denzil, death of, 178
IGOROT. See BONTOC IGOROT
INLAID and incrusted work, 16
INTERNATIONAL ARCHEOLOGICAL CONGRESS, 360
INTERNATIONAL CONGRESS OF AMERICANISTS, 358, 650.
INTERNATIONAL CONGRESS OF CRIMINAL ANTHROPOLOGY, 178

JENKS, A. E., appointed delegate, 709
JESUP, MORRIS K., death of, 171
JOHN CARTER BROWN LIBRARY, publications of, 504
JOYCE, T. A. The southern limit of inlaid and incrusted work in America, 16

KAMCHATKA EXPEDITION, 495
KELSEY, F. W. Some archeological forgeries from Michigan, 48
KELTIC cemetery in Switzerland, 165.
KENTUCKY, Indian pipe from, 345
— the name, 330
KROEBER, A. L. Notes on the Ute language, 74. Researches by, 360
KROEBER, HENRIETTE R. Pima tales, 231

LAMHATTY, account of, 568
LANGUAGE of the Taensa, 24
— Ute, notes on, 74
LA PLATA RIVER, ruins on, 255
LA TÊNE, recent excavations at, 331
LEFT-HANDEDNESS among Indians, 498
LOCKYER, Sir NORMAN, election of, 178
LONG'S HILL, NEB., excavations at, 60
LOWBER, J. W., honored, 708
LOWER CALIFORNIA, tribes of, 236

MACCURDY, G. G. Anthropology at the Chicago meeting, 103. Some recent paleolithic discoveries, 634. Sixteenth International Congress of Americanists, 650. Paris School of Anthropology, 698. Election of, 708
MCGUIRE, J. D. An interesting Kentucky pipe and a unique English medal of the Cromwellian period, 345. Ethnological and archeological notes on Moosehead lake, 549
MCINTOSH, ROLLY, death of, 707
MAINE. See MOOSEHEAD LAKE.
MALAY traps, 503
MANITOBA, prehistoric man in, 33
MARRIAGE in Arranda tribe, 88
MARTIN WHITE studentship, 360
MASON, O. T. Hook-and-eye work, 176. Mind and matter in culture, 187. Mohammedan Malay traps, 503. Obituary of, 661
MASSACHUSETTS, steatite quarry in, 702
MATERIAL CULTURE of Canadian Delawares, 408
MATHEWS, R. H. Marriage and descent in the Arranda tribe, Central Australia, 88. Remarks on paper by, 352. Sociology of the Chingalee tribe, 281
MAYNARD, GEO. C. Obituary of John Hitz, 350
MEDAL, Cornplanter, 358
— of Cromwellian period, 345
MERRIAM, C. HART. Corrections concerning California Indians, 356. Totemism in California, 558
MESA VERDE, preservation of ruins of, 357
MEXICO, symbolic meaning of dog in, 419
MICHIGAN, archeological forgeries from, 48
MILHAU, L. J. DE. Obituary of John Walter Hastings, 356
MIND and matter in culture, 187
MISSOURI-SASKATCHEWAN area, ethnographical problems in, 197
MOHAMMEDAN Malay traps, 503
MONTGOMERY, C. J. Survivors of the negro slave yacht *Wanderer*, 611
MONTGOMERY, HENRY. Prehistoric man in Manitoba and Saskatchewan, 33
MOOREHEAD, W. K. Ruins at Aztec and on Rio La Plata, New Mexico, 255. Publication by, 707. Appointment of, 709
MORLEY, S. G. Excavation of the Cannonball ruins, 596
MOUND, serpent, in Ohio, 703
MUSKINGUM, ancient works on the, 342

NEBRRASKA, excavations at Long's Hill, 60
— Oto village site in, 173
NECK-RINGS, copper, of Alaska, 644
NEGRO survivors of slave yacht *Wanderer*, 611
NEW MEXICO, ruins in, 255
NORTH, ARTHUR W. Native tribes of Lower California, 236
NORTON, CHARLES ELIOT, death of, 704

OHIO, no new serpent mound in, 703
ORIENTAL and Gypsy tattooing, 361
OTO village site in Nebraska, 173
OZARKS, exploration of caverns in, 351

PALEOLITHIC discoveries, 634
PAN-AMERICAN SCIENTIFIC CONGRESS, 336
PARIS SCHOOL OF ANTHROPOLOGY, 698
PERIODICAL literature, 145, 306, 470, 677
PETROGLYPHS in southeastern Alaska, 221
PHILIPPINE arrow poisons, 357

PHILIPPINES, Bontoc Igorot games, 563
PHILLIPS ACADEMY lectures, 706
— publication, 707
PHONOGRAPHS and the museum, 494
PIMA tales, 231
PIPE, Indian, from Kentucky, 345
POISONS, arrow, of Philippines, 357
PORTO RICO, archeology of, 624
POTTERS, Catawba, and their work, 399
POWELL, J. W., proposed memorial to, 179
PREHISTORIC man in Canada, 33
PRESERVATION of antiquities, 360
— of Mesa Verde ruins, 357
— of objects of wood, 348

QUARRY, steatite, in Massachusetts, 702
QUIVER, ceremonial, from California, 168

READ, C. H., election of, 360
RIABOUCHINSKY Kamchatka Expedition, 495
RICE, HAMILTON, collections of, 358
RIDGEWAY, Prof. W., election of, 178
ROEHRIG, F. L. O., obituary, 502
RUINS in New Mexico, 255
— See ARCHEOLOGY

SAPIR, EDWARD, appointment of, 504
SASKATCHEWAN, prehistoric man in, 33
— See MISSOURI-SASKATCHEWAN
SAVILLE, M. H., studies of, 359
SAWTELL AVENUE MOUND, Cleveland, 502
SCHOOL of American Archeology, 353
— of Anthropology, Paris, 698
SENECA corn-foods and their preparation, 575
SERPENT MOUND, no new, in Ohio, 703
SETON-KARR, H. W., collections presented by, 177
SIMMS, S. C. Bontoc Igorot games, 563
SINCLAIR, A. T. Tattooing, Oriental and Gypsy, 361
SKINNER, ALANSON. A Massachusetts steatite quarry, 702
SLAVE YACHT *Wanderer*, survivors of, 611
SMITH, HARLAN I. Clubs from northwestern America, 496. No new serpent mound in Ohio, 703.
SOCIÉTÉ d'Anthropologie de Paris, 359
— Préhistorique de France, 179
SOCIOLOGY of the Chingalee, 281
SOUTH AMERICA, first doctor's thesis in anthropology in, 334
— Pan-American Scientific Congress in, 336
SPECK, F. G., receives doctorate, 503
SPINDEN, H. J., appointment of, 360
SPITZKA, E. A., election of, 360
SPOFFORD, A. R., obituary, 503
STARR, FREDERICK. Note on survivors of slave yacht *Wanderer*, 621. Researches of, 705
STEATITE quarry in Massachusetts, 702
SWANTON, J. R. The language of the Taensa, 24
SWISS collections, ethnographical material in, 1
SWITZERLAND, Keltic cemetery in, 165

TAENSA, language of, 24
TALES, Pima, 231
TATTOOING, Oriental and Gypsy, 361
TCUHU, House of, 174
TEN KATE, H. House of Tcuhu, 174
THOMAS, N. W. Remarks on paper by R. H. Mathews, 352. Researches of, 708
THOMPSON, MRS F. F., gift by, 708
TOMAHAWK, the, 264
— the term, 277
TOTEMISM in California, 558
TOZZER, A. M. Harvard Anthropological Society, 354

UNIVERSITY OF MINNESOTA, anthropology at, 359
UTE language, notes on, 74

VALENTINE, E. P., obituary, 501
VENTILATORS in ceremonial rooms, 387
VESTIGES of material culture among Delawares, 408
VILLAGE SITE, Oto, in Nebraska, 173
VIRGINIA, research in, 531
— See LAMHATTY

WANDERER, slave yacht, negro survivors of, 611
WILLOUGHBY, C. C. Preservation of water-soaked archeological objects of wood, 348. Wooden bowls of Algonquian Indians, 423
WISSLER, CLARK. Death of Morris K. Jesup, 171. Ethnographical problems of the Missouri-Sackatchewan area, 208
WOODEN bowls of Algonquian Indians, 423
— objects, preservation of, 348
WRIGHT, JOHN HENRY, death of, 706